DECLARATION FOR RECORD OF DECISION

SITE NAME AND LOCATION

Hooker Chemical/Ruco Polymer Site
Hicksville
Nassau County, New York

STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for Operable Unit 2 for the Hooker Chemical/Ruco Polymer site located in Hicksville, Nassau County, New York, developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision document summarizes the factual and legal basis for selecting the remedy for this site.

The State of New York has concurred with the selected remedy; a letter of concurrence is attached. The information supporting this remedial action decision is contained in the administrative record for this site.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present an imminent and substantial threat to public health, welfare or the environment.

DESCRIPTION OF THE SELECTED REMEDY

The remedy selected for this Operable Unit at the Hooker Chemical/ Ruco Polymer site is a final remedy for the PCB-contaminated soils that surround the pilot plant at the site. The remaining portion of the site, the groundwater and soils contaminated by volatile organic compounds, will be addressed in a future ROD.

The major components of the selected remedy include the following:

- Excavation of PCB-contaminated soils in excess of 10 ppm in the direct spill area and the transport areas surrounding the pilot plant. Soils at the bottom of the recharge basin (Sump 3) will be excavated to ten feet from the existing surface. Confirmatory sampling will be performed to ensure soils that remain after the excavation will have PCB concentrations that do not exceed 10 ppm.

- Excavated soils with PCB concentrations between 10 ppm and 500 ppm, approximately 1100 cubic yards, will be shipped for disposal to an off-site chemical waste landfill permitted under TSCA.

- Stockpiled soils, which were previously excavated during the removal of the underground fuel oil tank, will be included in the disposal of PCB-contaminated soils at an off-site chemical waste landfill.

- Soils with PCB concentrations exceeding 500 ppm, approximately 36 cubic yards, will be shipped off-site to a TSCA-permitted incineration facility. Residuals will be disposed of, as appropriate, by the incineration facility.

- Excavated areas will be backfilled with clean soil, and these areas, excluding the recharge basin, will be paved with asphalt as appropriate.

- The PCB contamination in former Sump 5 will be left in-place.

DECLARATION OF STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this site. Because treatment is being used to address the principal threats at the site, this remedy satisfies the statutory preference for treatment as a principal element of the remedy.

As the remedy for this Operable Unit will not result in hazardous substances remaining above health-based levels in the areas it addresses, the five year review will not apply to this action.

Constantine Sidamon-Eristoff
Regional Administrator

9/28/90
Date

DECISION SUMMARY

HOOKER CHEMICAL/RUCO POLYMER SITE
HICKSVILLE, NEW YORK

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II

NEW YORK

HRC 001 1737

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I. SITE LOCATION AND DESCRIPTION

The Hooker Chemical/Ruco Polymer site (the "Site") is located on a 14 acre tract of land off of New South Road, in Hicksville, Town of Oyster Bay, Nassau County, New York. (See Figures 1 and 2) The Site is bordered by the Long Island Railroad to the south, the Grumman Aerospace Corporation facilities to the east, and various commercial and industrial facilities to the north. A residential area is situated directly across New South Road, to the west of the Site, which is approximately 800 feet away from the area addressed in this Record of Decision (ROD). According to 1989 estimates, the population of Hicksville is 42,400 persons.

The Site is relatively flat with a gentle slope toward the south. There are several recharge basins or sumps, between ten and twenty feet deep, which recharge the groundwater underlying the Site. The uppermost aquifer, the Upper Glacial aquifer, is approximately 40 feet thick in this area, and is mostly unsaturated. The water table is approximately 50 feet below the ground surface. Below the Upper Glacial aquifer, is the unconfined Magothy aquifer, which is the primary source of drinking water for Long Island residents. The Magothy aquifer is designated as a sole-source aquifer. In the area surrounding the site, water is supplied by public purveyors, so residents do not use private wells to supply their potable water. There are six public supply wells within a 1-mile radius of the Site. These wells should not be impacted by the Site because they are not situated to the south of the Site, which is the direction of regional groundwater movement. There are no significant surface water bodies in the vicinity of the Site.

The area where the Site is located is not known to contain any ecologically significant habitat, wetlands, agricultural land, historic or landmark sites, which are impacted by the Site.

Major site features include two main production plants (See Figure 3), a pilot plant located between these plants, a warehouse building, an administration and laboratory building, numerous above-ground chemical storage tanks and associated piping, and several recharge basins.

II. SITE HISTORY AND ENFORCEMENT ACTIVITIES

The Site has been used for industrial purposes since 1946, at which time two companies occupied the site; the Insular Chemical Company and the Rubber Company of America. Although two separate corporations, they shared the same pilot plant. In 1956 the two companies merged into the Rubber Corporation of America. In 1965, the company was purchased by the Hooker Chemical and Plastics Corporation and was known as the Ruco Division. Hooker has undergone several name changes and is currently known as the Occidental Chemical Corporation. In March 1982, the employees bought the company and it became known as Ruco Polymer Corporation. Ruco Polymer currently owns the property, and the facility is still active.

Since 1946, the facility was used for the production of various polymers, including polyvinyl chloride (PVC), styrene/butadiene latex, vinyl chloride/vinyl acetate copolymer, and polyurethane, as well as ester plasticizers. The facility is currently active, and manufactures such products as polyester, polyols and powder coating resins.

During site operations between 1956 to 1975, industrial wastewater from the facility was discharged to six (6) on-site recharge basins or sumps. This wastewater contained, among other things, vinyl chloride, trichloroethylene, barium and cadmium soap, vinyl acetate, organic acids, and styrene condensate. As a result of these releases, groundwater downgradient from the site has been contaminated. Currently, only non-contact cooling water is discharged into Sump 4. Since 1975, a concrete settling basin has been used to store ester waste prior to being incinerated on-site. Hazardous wastes are stored in drums on-site until they are disposed of at a permitted off-site facility.

From 1946 to 1978, the pilot plant, which is used for small scale and trial production, utilized a heat transfer fluid called Therminol, which contained PCBs. During the operation of the facility, there was a release of PCBs to the soil adjacent to the pilot plant. Some of this contaminated soil was spread to surrounding areas by surface water run-off and truck traffic. Occidental has conducted several investigations, since 1984, to determine the extent of PCB contamination around the pilot plant. In 1989, an underground fuel oil storage tank adjacent to Plant 1 was removed, and the soils surrounding the tank were excavated, sampled, and found to be contaminated with PCBs. These excavated soils have been covered with plastic sheeting, pending the remediation of the other PCB-contaminated soils on the site.

The site was placed on the National Priorities List (NPL) in 1984. Initially, negotiations by NYSDEC and EPA failed to reach a settlement with the potentially responsible parties (Occidental Chemical and Ruco Polymer) to conduct the Remedial Investigation and Feasibility Study (RI/FS) for the site. Therefore, EPA issued a work assignment to its contractor, Ebasco Services, Inc., to prepare a work plan and conduct the RI/FS. However, in September 1988, after the work plan was finalized, Occidental agreed to perform the work. In September 1989, field work commenced for the RI/FS. Field work was completed in February 1990 and a draft Remedial Investigation Report was submitted in April 1990. This report is currently under review by EPA and NYSDEC.

Given that the PCB-contaminated areas had been defined by previous investigations, Occidental proposed to perform an early action to remediate these areas. To support such an action, Occidental prepared a Focused Feasibility Study (FFS) which analyzes alternatives to address the PCB-contaminated areas on the site (See Figure 4), and which is the subject of this ROD.

III. HIGHLIGHTS OF COMMUNITY PARTICIPATION

The FFS Report, the Risk Assessment and the Proposed Plan for the Hooker Chemical/Ruco Polymer site were released to the public for comment on July 31, 1990. These documents were made available to the public in information repositories which are maintained at the EPA Region II offices, the Hicksville Public Library and the Town of Oyster Bay Town Hall. The notice of availability for these two documents was published in the Nassau County edition of Newsday on July 31, 1990. A public comment period on the documents was held from July 31, 1990 to August 30, 1990. In addition, a public meeting was held on August 7, 1990. At this meeting, representatives from EPA presented the Proposed Plan, and later answered questions concerning such Plan and other details related to the RI/FS reports. Responses to comments and questions received during this period are included in the Responsiveness Summary, which is part of this ROD.

IV. SCOPE AND ROLE OF OPERABLE UNIT OR RESPONSE ACTION WITHIN SITE STRATEGY

As with many Superfund sites, the problems at the Hooker Chemical/ Ruco Polymer site are complex. At this point in time, EPA does not have enough information to select a remedy for the entire Site. As a result, EPA has organized the remedial work into two phases, or Operable Units. This ROD addresses the first planned remedial action at the site.

The two Operable Units are divided as follows. Operable Unit One includes the majority of the Site, such as the contaminated groundwater and soil resulting from previous disposal activities, other than the previous release of PCBs to soils surrounding the pilot plant. Operable Unit Two addresses the PCB-contaminated soils surrounding the pilot plant.

As stated above, the draft Remedial Investigation for Operable Unit 1 was submitted in April 1990 and is under review by EPA and NYSDEC.

Operable Unit Two, which this ROD addresses, includes a portion of the Site which had been characterized by previously completed studies, and can be addressed at this time. This Operable Unit addresses PCBs, while the rest of the Site and the groundwater is contaminated mainly by volatile organic chemicals. By dividing the Site into two Operable Units, remediation can be started, thereby alleviating the threat from PCBs at the Site, while the studies for the other portion are being completed. The remediation for this portion of the Site will not interfere with the final remediation for the Site.

V. SUMMARY OF SITE CHARACTERISTICS

The PCB contamination to be addressed by this ROD was caused by releases of heat transfer fluid, Therminol, from a relief valve located on the south side of the pilot plant. Therminol contained PCBs; more specifically, Aroclor 1248. Studies conducted to define the extent of PCB contamination found that the PCBs were concentrated in a "direct spill area" adjacent to the pilot plant. Soils surrounding the pilot plant have PCB contamination which is believed to have been caused by truck traffic spreading PCBs from the direct spill area. These soils are referred to as the "transport areas." In addition, there is PCB contamination in the nearby recharge basin (Sump 3) which is believed to have been conveyed from the direct spill area and transport area via surface water runoff. A fourth area of PCB contamination was discovered when an underground fuel oil storage tank, adjacent to Plant 1, was excavated after it failed a pressure test. Some of the soils surrounding the tank were also excavated, sampled, and found to be contaminated with PCBs. These soils have been stored on-site and covered with plastic sheeting while they await remediation for the other PCB-contaminated soils from the Site. The data from the soil samples collected to characterize the extent of PCB contamination at the Site are shown on Figures 5 and 6, and listed in Table 1.

In the direct spill area, the soil has been found to be contaminated with PCBs in concentrations as high as 23,000 parts per million (ppm). In this area, contamination has been found as deep as 10 feet below the ground surface. The most highly contaminated soil is found near the ground surface, but it should be noted that this area is paved with asphalt. The asphalt pavement is helpful in that it lessens the probability for exposure and limits further migration of the contamination.

The soil in the transport related area is generally less contaminated the further it is from the direct spill area. Again, the most highly contaminated material is found near the ground surface, with the contamination reaching as deep as 3 feet below the surface in several areas. Concentrations range from over 500 ppm to below the analytical detection limit (the EPA Contract Lab Program contract required detection limit is 0.08 ppm) in this area. A large portion of the transport related area is paved with asphalt.

It is believed that the contamination in the recharge basin, Sump 3, is due to contaminated soil from the direct spill area and the transport related area being carried into the sump via stormwater run-off. PCB concentrations in the recharge basin have been measured as high as 176 ppm, and as deep as 10 feet from the surface of the recharge basin.

The soils which were previously excavated during the fuel oil tank removal are being stored on plastic sheeting, with a plastic sheeting cover in an area to the east side of the pilot plant. These soils, approximately 70 cubic yards in volume, range up to 420 ppm in concentration.

Data collected and analyzed for the Operable Unit 1 RI/FS confirm the PCB concentrations from the previous studies. In addition, the data from the RI/FS show that there is no significant contamination from other chemicals, in the soils to be addressed by this ROD, which would influence the treatment alternative selected in this ROD.

One sample taken during the RI/FS from a boring in former Sump 5 had a PCB concentration of 24 ppm. This sample was taken at a depth of 10 to 12 feet below the existing grade, which is believed to correspond with the surface of that sump before it was filled.

The volumes of PCB-contaminated soils associated with specific concentration ranges are as follow:

10 ppm - 25 ppm	=	410 cubic yards
25 ppm - 500 ppm	=	664 cubic yards
above 500 ppm	=	36 cubic yards.

Thus, the total volume of PCB-contaminated soils with PCB-concentrations exceeding 10 ppm is estimated to be 1,110 cubic yards. For an action level of 25 ppm, it is estimated that a total of 700 cubic yards would need to be excavated.

VI. SUMMARY OF SITE RISKS

EPA conducted a risk assessment, also referred to as an Endangerment Assessment (EA), to evaluate the potential risks to human health and the environment under the "no-action" alternative, which would be the risk presented if the Hooker/Ruco site was left in its current state. In addition, the risk assessment evaluated the risk for future use scenarios associated with different cleanup levels. The only chemical evaluated in the risk assessment, the indicator chemical, was PCBs, since this ROD is only addressing the soils contaminated with PCBs surrounding the pilot plant. Samples collected from the direct spill area have been found to contain PCBs in concentrations as high as 23,000 ppm. Table 2 includes the range, frequency of detection and mean value for PCBs in surface and subsurface samples. No other contaminants were found in significant concentrations in the soils in this area.

It should be noted that the EPA guidance document, "Guidance on Selecting Remedies for Superfund Sites with PCB Contamination," based on the TSCA Spill Cleanup Policy, states that a 10 inch cover of clean soil will reduce risks by approximately one order of magnitude. In Sump 5, PCBs were detected in one sample at a concentration of 24 ppm at a depth of approximately 10 feet. The risk from this relatively low concentration is therefore reduced by approximately ten orders of magnitude. Such a risk is below EPA's acceptable risk range, and therefore does not warrant remediation.

Contaminant Identification and Exposure Assessment

EPA has identified several potential exposure pathways by which the public may be exposed to PCB contamination from the Site. These pathways are: 1) the ingestion of soil; 2) direct contact with the soil; and, 3) inhalation of suspended site soil.

As of the date that the EA was prepared, there was no cancer potency factor, or slope factor (described below), available for inhalation exposure to PCBs. The most current EPA risk assessment guidance does not allow the oral slope factor to be used in the place of an inhalation slope factor. Therefore, the calculation for inhalation of suspended site soils calculated a Chronic Daily Intake (CDI), but did not calculate a risk number. (The risk number is the product of the slope factor and the CDI). The inhalation CDIs calculated are generally several orders of magnitude lower than the CDIs from oral intake, so if the slope factors were assumed to be similar, the risk from the inhalation route would be negligible.

Exposure to PCBs via groundwater was not evaluated because PCBs will not readily migrate to groundwater and no PCBs have been found in the samples from the groundwater monitoring wells on-site. Exposure to PCBs via the inhalation of volatile fractions were not examined because a screening level model indicated minimal amounts of volatile flux. The inhalation pathway, was also not evaluated in the future-use scenario because of the unavailability of inhalation cancer slope factors.

The potentially exposed populations evaluated include: 1) site workers; 2) trespassers; 3) residents; and, 4) construction workers.

Toxicity Assessment

PCBs have been associated with non-carcinogenic effects, however, there are no Reference Doses (RfDs) available in the Integrated Risk Information System (IRIS) for PCBs, so non-carcinogenic risks were not quantified for this site. Comparing the Rfd to the expected contaminant intakes from the Site indicates the potential for adverse health effects from that contaminant.

PCBs are considered to be potential human carcinogens, and therefore will be evaluated against EPA's acceptable risk range for additional cancer incidents. Cancer potency factors (CPFs), or slope factors, have been developed by EPA's Carcinogenic Risk Assessment Verification Endeavor for estimating excess lifetime cancer risks associated with exposure to potentially carcinogenic chemicals. CPFs, which are expressed in units of $(mg/kg\text{-}day)^{-1}$, are multiplied by the estimated intake of a potential carcinogen, in mg/kg-day, to provide an upper-bound estimate of the excess lifetime cancer risk associated with exposure at that intake level. The term "upper bound" reflects the conservative estimate of the risks calculated from the CPF. Use of this approach makes underestimation of the actual cancer risk highly unlikely. Cancer potency factors are derived from the results of human epidemiological studies or chronic animal bioassays to which animal-to-human extrapolation and uncertainty factors have been applied. The cancer potency factor for PCBs is 7.7 $(mg/kg\text{-}day)^{-1}$.

Human Health Risk Characterization

Excess lifetime cancer risks are determined by multiplying the intake level, or CDI, (calculated in Table 3), with the cancer potency factor for PCBs, 7.7 $(mg/kg\text{-}day)^{-1}$. These risks are probabilities that are generally expressed in scientific notation (e.g., $1x10^{-6}$ or 1E-06). An excess lifetime cancer risk of $1x10^{-6}$ indicates that, as a plausible upper bound, an individual has a one in one million chance of developing cancer as a result of site-related exposure to a carcinogen over a 70-year lifetime under the specific exposure conditions at a site. EPA considers a cancer risk range of 10^{-4} to 10^{-6} to be acceptable, with 10^{-6} used as a point of departure.

The risk assessment determined that under a present-use scenario, the risk was greatest for employees that work on the Site, and that the Reasonable Maximum Exposure was estimated to be 5.9×10^{-3}. The average case exposure scenario (a more realistic scenario) estimated the risk to be 3.7×10^{-4}.

Table 4 presents a summary of the total carcinogenic risks and the carcinogenic risks posed by each exposure pathway for various potentially exposed populations.

Uncertainties

The risk assessment process is subject to uncertainty from multiple sources including environmental chemistry sampling and analysis, fate and transport modelling of site contaminants, estimates of exposures to nearby populations, and toxicological data used for the development of CPFs of RfDs of the indicator contaminants. Additional uncertainties are addressed by making

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conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the EA provides upper bound estimates of the risks to populations near the Site, and is highly unlikely to underestimate the risks related to the Site.

Risk Summary

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

VII. DESCRIPTION OF ALTERNATIVES

Common Elements. Except for the "No Action" alternative, all of the alternatives have a number of common components. Alternatives 3 through 14 all involve excavating PCB-contaminated soils, in excess of a specified cleanup level, prior to treatment or off-site disposal. Confirmatory sampling will be conducted to ensure that the cleanup level has been achieved. Excavation in the direct spill area will probably require the use of sheet piling. In addition, in alternatives 3 through 14, excavated areas will be backfilled with clean fill, and then these areas, except for the recharge basin, will be paved with asphalt. In alternatives that include off-site thermal treatment, the incineration facility will be responsible for the disposal of residual material.

The time to implement the remedial alternatives below, are estimated from the start of Remedial Design. Implementation time does not include long-term (30 year) operation and maintenance (O&M) costs, if any.

Alternative 1:
NO ACTION (RESTRICTED ACCESS)

Capital Cost: $49,000
Annual O&M Costs: $3,000
Present Worth: $139,000
Time to Implement: 12 months

CERCLA requires that the "no-action" alternative be evaluated at every site to establish a baseline for comparison. Under this alternative, fencing would be installed to limit access to contaminated soils. Deed restrictions would be obtained to maintain industrial restricted use for this and adjacent land (up to 330 feet from the contaminated areas). Monitoring would be conducted to assess the migration of contamination.

Alternative 2:
IN-SITU CONTAINMENT

Capital Cost: $75,640
Annual O&M Costs: $1,000
Present Worth: $105,640
Time to Implement: 12 months

All soils containing in excess of 10 ppm of PCBs (approximately 7,700 square feet) would be covered with twelve inches of clean soil, and then would be paved with a three-inch layer of asphalt. The recharge basin would be filled and capped similarly. A new recharge basin would be constructed to replace the existing one. The costs above include replacement of the asphalt after 15 years. Bi-annual inspections would be performed for a 30-year period to ensure that the cap is maintained in good condition. Deed restrictions would be obtained to maintain adjacent property as an industrial restricted area.

Alternative 3:
OFF-SITE LANDFILLING OF SOILS IN EXCESS OF 25 PPM

Capital Cost: $639,914
Annual O&M Costs: $1,000
Present Worth: $669,914
Time to Implement: 13 months

All soils in excess of 25 ppm of PCBs would be excavated from the site and hauled to a chemical waste landfill permitted under the Toxic Substances Control Act (TSCA). Soils in excess of 10 ppm would be contained in-place as in Alternative 2. Deed restrictions would be required to maintain adjacent property as an industrial restricted area.

Alternative 4:
OFF-SITE LANDFILLING OF SOILS IN EXCESS OF 25 PPM; OFF-SITE THERMAL DESTRUCTION OF SOILS IN EXCESS OF 500 PPM

Capital Cost: $717,734
Annual O&M Costs: $1,000
Present Worth: $747,734
Time to Implement: 13 months

This alternative is similar to Alternative 3, except that soils containing concentrations of PCBs greater that 500 ppm would be hauled off-site and thermally destroyed in an incineration facility permitted to burn PCBs. Soils in excess of 10 ppm would be contained in-place as in Alternative 2. Deed restrictions would be required to maintain adjacent property as an industrial restricted area.

Alternative 5:
ON-SITE BIOREMEDIATION OF SOILS IN EXCESS OF 25 PPM

Capital Cost: $1,230,220
Annual O&M Costs: $1,000
Present Worth: $1,260,220
Time to Implement: 36 months

Soils with PCB concentrations exceeding 25 ppm would be excavated and placed on leaching beds to be constructed on-site. These soils would then be washed with detergents, and the leachate collected. The leachate would then be introduced into a bioreactor, and the leached soil would then be fed into the bioreactor. Soils exceeding 10 ppm that remain on site would be contained in-place, as in Alternative 2. Deed restrictions would be required.

Alternative 6:
ON-SITE BIOREMEDIATION OF SOILS IN EXCESS OF 25 PPM; OFF-SITE THERMAL DESTRUCTION OF SOILS IN EXCESS OF 500 PPM

Capital Cost: $1,288,494
Annual O&M Costs: $1,000
Present Worth: $1,318,494
Time to Implement: 24-36 months

This alternative is very similar to Alternative 5, with the exception of soils containing concentrations of PCBs greater that 500 ppm, which would be hauled off-site and thermally destroyed in an incineration facility permitted to burn PCBs. Soils in excess of 10 ppm would be contained in-place as in Alternative 2. Deed restrictions would be required.

Alternative 7:
ON-SITE THERMAL DESTRUCTION OF SOILS IN EXCESS OF 25 PPM

Capital Cost: $1,376,170
Annual O&M Costs: $1,000
Present Worth: $1,406,170
Time to Implement: 19 months

Soils exceeding 25 ppm would be excavated and treated by a mobile thermal destruction unit which would be set up on-site. Soils above 10 ppm that remain on-site will be contained in-place as in Alternative 2. Deed restrictions would be required.

Alternative 8:
OFF-SITE THERMAL DESTRUCTION OF SOILS IN EXCESS OF 25 PPM

Capital Cost: $2,160,130
Annual O&M Costs: $1,000
Present Worth: $2,190,130

Time to Implement: 13 months

This alternative is similar to Alternative 7, however, instead of bringing a mobile thermal treatment unit on-site, the excavated materials would be sent off-site to a facility permitted to incinerate PCBs. Soils above 10 ppm that remain on-site will be contained in-place as in Alternative 2. Deed restrictions would be required.

Alternative 9:
OFF-SITE LANDFILLING OF SOILS IN EXCESS OF 10 PPM

Capital Cost: $917,830
Annual O&M Costs: $0
Present Worth: $917,830
Time to Implement: 13 months

Soils with PCB concentrations above 10 ppm would be excavated and shipped to an off-site TSCA-permitted landfill. Clean fill would be placed in excavated areas, and the area would be paved.

Alternative 10:
OFF-SITE LANDFILLING OF SOILS IN EXCESS OF 10 PPM; OFF-SITE THERMAL DESTRUCTION OF SOILS IN EXCESS OF 500 PPM

Capital Cost: $995,650
Annual O&M Costs: $0
Present Worth: $995,650
Time to Implement: 13 months

Soils that exceed a PCB concentration of 10 ppm would be excavated. Soils below 500 ppm would be shipped to an off-site TSCA-permitted chemical waste landfill. Soil with concentrations above 500 ppm would require treatment at an off-site thermal destruction facility, which is permitted to burn PCBs. Excavated soils would be replaced with clean fill and then the excavated areas, except for the recharge basin would be repaved.

Alternative 11:
ON-SITE BIOREMEDIATION OF SOILS IN EXCESS OF 10 PPM

Capital Cost: $1,726,310
Annual O&M Costs: $0
Present Worth: $1,726,310
Time to Implement: 42 months

Soils that exceed 10 ppm would be excavated and placed on leaching beds to be constructed on-site. These soils would then be washed with detergents, and the leachate collected. The leachate would then be injected into the bioreactor, and the leached soil would then be fed into the bioreactor for treatment by biological breakdown of the contaminants.

Alternative 12:
ON-SITE BIOREMEDIATION OF SOILS IN EXCESS OF 10 PPM; OFF-SITE THERMAL DESTRUCTION OF SOILS IN EXCESS OF 500 PPM

Capital Cost: $1,784,584
Annual O&M Costs: $0
Present Worth: $1,784,584
Time to Implement: 36 - 42 months

This alternative is very similar to Alternative 11, however, soils exceeding 500 ppm would be segregated and shipped off-site to a facility permitted to incinerate PCBs.

Alternative 13:
ON-SITE THERMAL DESTRUCTION OF SOILS IN EXCESS OF 10 PPM

Capital Cost: $1,955,660
Annual O&M Costs: $0
Present Worth: $1,995,660
Time to Implement: 20 months

Soils exceeding 10 ppm would be excavated and treated by a mobile thermal destruction unit which would be set up on-site.

Alternative 14:
OFF-SITE THERMAL DESTRUCTION OF SOILS IN EXCESS OF 10 PPM

Capital Cost: $3,306,740
Annual O&M Costs: $0
Present Worth: $3,306,740
Time to Implement: 13 months

This alternative is similar to Alternative 13, however, instead of bringing a mobile thermal treatment unit on-site, the excavated materials would be sent off-site to a facility permitted to incinerate PCBs.

VIII. SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

In accordance with the National Contingency Plan (NCP), a detailed analysis of each alternative is required. The purpose of the detailed analysis is to objectively assess the alternatives with respect to nine evaluation criteria that encompass statutory requirements and include other gauges of the overall feasibility and acceptability of remedial alternatives. This analysis is comprised of an individual assessment of the alternatives against each criterion and a comparative analysis designed to determine the relative performance of the alternatives and identify major trade-offs, that is, relative advantages and disadvantages, among them.

The nine evaluation criteria against which the alternatives are evaluated are as follows:

Threshold Criteria - The first two criteria must be satisfied in order for an alternative to be eligible for selection.

1. **Overall Protection of Human Health and the Environment** addresses whether a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. **Compliance with Applicable, or Relevant and Appropriate Requirements (ARARs)** is used to determine whether each alternative will meet all of its federal and state ARARs. When an ARAR is not met, the detailed analysis should discuss whether one of the six statutory waivers is appropriate.

Primary Balancing Criteria - The next five "primary balancing criteria" are to be used to weigh major trade-offs among the different hazardous waste management strategies.

3. **Long-term Effectiveness and Permanence** focuses on any residual risk remaining at the Site after the completion of the remedial action. This analysis includes consideration of the degree of threat posed by the hazardous substances remaining at the Site and the adequacy of any controls (for example, engineering and institutional) used to manage the hazardous substances remaining at the Site.

4. **Reduction of Toxicity, Mobility, or Volume Through Treatment** is the anticipated performance of the treatment technologies a particular remedy may employ.

5. **Short-term Effectiveness** addresses the effects of the alternative during the construction and implementation phase until the remedial response objectives are met.

6. **Implementability** addresses the technical and administrative feasibility of implementing an alternative and the availability of various services and materials required during its implementation.

7. **Cost** includes estimated capital, and operation and maintenance costs, both translated to a present-worth basis. The detailed analysis evaluates and compares the cost of the respective alternatives, but draws no conclusions as to the cost-effectiveness of the alternatives. Cost-effectiveness is determined in the remedy selection phase, when cost is considered along

with the other balancing criteria.

Modifying Criteria - The final two criteria are regarded as "modifying criteria," and are to be taken into account after the above criteria have been evaluated. They are generally to be focused upon after public comment is received.

8. **State Acceptance** reflects the statutory requirement to provide for substantial and meaningful State involvement.
9. **Community Acceptance** refers to the community's comments on the remedial alternatives under consideration, along with the Proposed Plan. Comments received during the public comment period, and the EPA's responses to those comments, are summarized in the Responsiveness Summary which is a part of this ROD.

The following is a summary of the comparison of each alternative's strengths and weaknesses with respect to the nine evaluation criteria.

1. Overall Protection of Human Health and the Environment.

Alternatives which would require the excavation and removal or treatment of PCB contamination in excess of 10 ppm are the most protective of human health and the environment. When soils exceeding this concentration are removed, risks from direct contact, ingestion, and inhalation of PCB-contaminated soil are reduced to acceptable levels for any future land-use. It should be recognized that all excavated areas would be backfilled with clean soil and these areas, except for the recharge basin would be repaved with asphalt. This would further reduce the potential for exposure and make the remedy more protective.

Alternatives that excavate and remove soils in excess of 25 ppm would be within EPA's acceptable risk range of 10^{-4} to 10^{-6}, but the remedy would be less protective than a 10 ppm cleanup level. In addition, soils between 10 ppm and 25 ppm would have to be contained and deed restrictions placed on the property to maintain it, as well as property adjacent to it, as an industrial area.

In-place containment of the contaminated soils, although reducing the overall risk, would not be protective of employees who work at the Site and come into direct contact with the material below the cap while working on utilities. In addition, the contaminated soil which was previously excavated and the soil in the recharge basin would not be contained and would therefore still present a risk.

2. **Compliance with ARARs.**

The Toxic Substances Control Act (TSCA) is applicable for the current disposal of soil with PCB concentrations in excess of 50 ppm. Under the TSCA regulations, this material must be incinerated, treated by a method equivalent to incineration, or be disposed of in a chemical waste landfill. The soil that was excavated during the underground fuel oil tank removal is in excess of 50 ppm, and therefore, the no-action and in-place containment alternatives would not comply with this ARAR for this material. In the other alternatives, during the remediation process, TSCA would apply to the disposal of any excavated material with PCB contamination in excess of 50 ppm.

The TSCA PCB Spill Cleanup Policy outlines the measures to address spills of PCBs after its effective date of May 4, 1987. Because the disposal or spills of PCBs at the Site occurred prior to this date, the TSCA PCB Spill Cleanup Policy is not applicable. However, as a codified policy representing substantial scientific and technical evaluation, the TSCA PCB Spill Cleanup Policy is used as a "To Be Considered" (TBC) criterion. As such, the cleanup standards set in the policy, 10 ppm for residential areas and 25 ppm for industrial area, were used in the FFS to evaluate remedial actions at the Site.

The EPA guidance document, "Guidance on Selecting Remedies for Superfund Sites with PCB Contamination" is also a TBC criterion. This document suggests that in most cases, in an industrial setting, all material with PCB concentrations exceeding 500 ppm should be treated. In cases where remaining material can be safely contained, containment is the remedy recommended. However, there is an exception for small volumes, which is suitable for this site. By using this exception and selecting full treatment, the guidance recommends cleanup of all material with PCB concentrations exceeding 10 ppm, in an industrial area. Such a cleanup would require no long-term management controls, and no access restrictions.

Alternatives 4, 6, 7, 8, 10, 12, 13 and 14 all require the incineration of some portion of the PCB-contaminated material. Any incinerator that is used must comply with TSCA requirements that the incinerator achieve a destruction and removal efficiency of 99.9999 percent. Only incinerators that could achieve this destruction and removal efficiency could be used in order to comply with this ARAR.

Treatability studies would be necessary to ensure that bioremediation could treat the contamination to levels that could be considered to be equivalent to incineration.

Land Disposal Restrictions are not ARARs for the soil at the Site because the material is not a restricted waste regulated under the Resource Conservation and Recovery Act (RCRA).

3. Long-Term Effectiveness and Permanence

Alternatives 9 through 14, which would remove or treat contaminated soils with PCB contamination in excess of 10 ppm would leave the smallest residual risk at the Site, therefore, these alternatives would be considered to have a very high degree of permanence. However, the effectiveness of bioremediation would have to be confirmed through pilot testing before its implementation. No long term monitoring, deed restrictions, or five-year review would be required with alternatives 9 through 14, because the Reasonable Maximum Exposure in a residential future-use scenario is calculated to be 1.8×10^{-5}, which is within EPA's acceptable risk range of 10^{-4} to 10^{-6}.

Alternatives 1 through 8 would leave residual contamination in excess of 10 ppm, and therefore would require the use of deed restrictions to maintain the property within 0.1 kilometers (approximately 330 feet) of the contamination as industrial property. Any of these alternatives would be less permanent than one which cleaned up to a concentration of 10 ppm. Long-term monitoring and a five-year review would be required for the no-action alternative.

One sample from former Sump 5 detected PCBs, at a concentration of 24 ppm, which is above the action level of 10 ppm. This sample was at a depth of 10 feet which is presumably the surface of the sump prior to being filled. With 10 feet of soil on top of a relatively low concentration of PCBs, the long-term risk from this area is minimal.

4. Reduction of Toxicity, Mobility or Volume Through Treatment

Alternatives which would provide for treatment, thermal destruction or bioremediation, of all the PCB-contaminated soils would be preferred under this criterion because they destroy the PCB contamination, thereby reducing the toxicity, mobility and volume of all the PCB contamination through treatment. Alternatives that provide for thermal destruction of soils contaminated in excess of 500 ppm would reduce the toxicity, mobility and volume of the most highly contaminated material. Off-site landfilling options, while reducing the volume of the contamination on-site, does not provide for treatment, and is therefore not preferred under this criterion.

5. Short-Term Effectiveness

All alternatives that involve the excavation of PCB-contaminated soils would increase the short-term risk. Similarly, on-site treatment alternatives would require materials handling that would increase the short-term risk. These risks could easily be kept to acceptable levels by using construction techniques that control dust emissions. Off-site alternatives would present the lowest risk because the contaminated material would be handled on-site for a shorter period of time. The off-site alternatives would simply require excavation and then shipping of the material from the Site. These alternatives could be accomplished within approximately one to two months of work on-site. Alternatives which involve on-site treatment would involve between 7 and 23 additional months before the remedy would be completed.

On-site incineration would require a mobilization period and, most likely, test burns to ensure that an acceptable destruction and removal efficiency could be achieved. This, as well as the treatment period, lengthens the overall time for remedial activities occurring at the Site. Bioremediation alternatives would require pilot studies to evaluate the effectiveness of the process. This would also lengthen the time until the Site was remediated. In addition, it is estimated that the bioremediation process, because it is temperature dependent, would take several summer seasons to treat the soil down to acceptable levels.

6. Implementability

Off-site landfilling alternatives are probably the most implementable of all the alternatives, assuming that there would be capacity for the 700 to 1100 cubic yards of soil in a chemical waste landfill. Off-site incineration of the soils that exceed 500 ppm of PCBs would probably not be a problem because there are only approximately 36 cubic yards of soils at this concentration. On the other hand, capacity at an off-site incinerator for the entire volume of contaminated soil may be difficult to find.

On-site alternatives may be difficult to implement because the Site is an active facility. In addition, pilot scale testing for bioremediation or test burns for on-site incineration would be impractical due to the small volume of material to be treated. A large percentage of the material would be treated in the pilot study before the remedy could be officially approved. Accordingly, the time for the testing, mobilization and demobilization would be close to that for the actual treatment.

7. Cost

The estimated costs for the alternatives range from a current value cost of $105,640 for in-situ containment, to $3,306,740 for off-site incineration of all soils over 10 ppm. Capital costs include fixed costs (costs associated with equipment mobilization and site preparation) and non-fixed costs associated with treatment of a specific disposal area). There are no operation and maintenance (O&M) costs for remedies which remove the soil contaminated in excess of 10 ppm from the Site. The O&M costs are very low for the alternatives 2 through 8, requiring only bi-annual inspections of the asphalt cap. The no-action alternative would require long-term monitoring which would actually make this alternative more expensive than the in-situ containment alternative.

8. State Acceptance

The State of New York concurs with the selected remedy.

9. Community Acceptance

The community accepts the selected remedy. The public generally approved of the any remedial action, but expressed concern over dust emissions from the Site during excavation. All comments by the community that were received during the public comment period are addressed in the attached Responsiveness Summary.

IX. THE SELECTED REMEDY

Based on the results of the RI and FFS, as well as a detailed evaluation of all comments submitted by interested parties during the public comment period, EPA has selected Alternative 10. This alternative includes:

1. Excavation of PCB-contaminated soils in excess of 10 ppm in the direct spill area and the transport areas surrounding the pilot plant. Soils at the bottom of the recharge basin will be excavated to ten feet from the existing surface. Confirmatory sampling will be performed to ensure soils that remain after the excavation will have PCB concentrations that do not exceed 10 ppm.

2. Soils with PCB concentrations between 10 ppm and 500 ppm, approximately 1100 cubic yards, will be shipped for disposal to an off-site chemical waste landfill permitted under TSCA.

3. Stockpiled soils, which were previously excavated during the removal of the underground fuel oil tank, will be included in the disposal of PCB-contaminated soils at an off-site chemical waste landfill.

4. Soils with PCB concentrations exceeding 500 ppm, approximately 36 cubic yards, will be shipped off-site to a TSCA-permitted incineration facility. Residuals will be disposed of, as appropriate, by the incineration facility.

5. Excavated areas will be backfilled with clean soil, and these areas, excluding the recharge basin will be paved with asphalt as appropriate.

6. The PCB contamination in former Sump 5 will be left in-place.

The selected alternative provides the best balance among the nine criteria used by EPA to evaluate remedial action alternatives. The capital cost of this alternative is approximately $1,000,000. There is no operation and maintenance cost associated with this alternative. It should take approximately 13 months to implement the remedy from the date that the design is initiated. Actual field work should be accomplished in about one to two months.

The 10 ppm cleanup level was selected based on the TSCA PCB Spill Cleanup Policy for residential areas, and the current EPA guidance, "Guidance on Remedial Actions for Superfund Sites with PCB Contamination," dated August 15, 1990. The risk assessment supported this cleanup level. The Reasonable Maximum Exposure for a future, residential-use scenario, would be within EPA's acceptable risk range with a 10 ppm cleanup level. Cleanup goals higher than 10 ppm PCBs would require deed restrictions to maintain the area around the PCB contamination for 0.1 kilometer (about 330 feet) as industrial property. Such institutional controls are difficult to monitor and enforce on a long-term basis, especially since this site is located in a residential neighborhood.

X. STATUTORY DETERMINATIONS

1. Protection of Human Health and the Environment

The selected remedy is protective of human health and the environment. Soils with PCB concentrations exceeding 10 ppm will be removed from the Site, and the most contaminated material will be thermally destroyed. With a 10 ppm cleanup goal, the risk assessment calculated that future-use scenarios for site workers and residents would represent a risk of 2.7×10^{-5}, and 1.8×10^{-5}, respectively. This is within EPA's acceptable risk range of 10^{-4} to 10^{-6}. The short-term risk from excavating the contaminated soil should be minimal. If it is necessary, construction practices for dust control would reduce the short-term risk even further.

2. Compliance with Applicable or Relevant and Appropriate Requirements

In order to select an action level for the cleanup of the Site, EPA and the State of New York have agreed to consider the TSCA PCB Spill Cleanup Policy (40 CFR, Part 761, Subpart G), which is not legally binding. The selected remedy will remove PCB-contaminated soils in excess of 10 ppm, which is consistent with the TSCA PCB Spill Cleanup Policy. The EPA document "Guidance on Selecting Remedies for Superfund Sites with PCB Contamination," although not legally binding, was also considered in the selection of a remedy for the site.

Action-specific ARARs are as follow. During the remediation, TSCA is applicable for excavated soils with concentrations greater than 50 ppm (40 CFR 761.60). For the thermal destruction of soils with PCB concentrations greater than 500 ppm, an incinerator that can attain a destruction and removal efficiency of 99.9999 percent will be an applicable requirement (40 CFR 761.70). The disposal of the soils containing less than 500 ppm in a chemical waste landfill permitted under TSCA will comply with 40 CFR 761.60. Even though soils with PCB concentrations between 10 and 500 ppm will be disposed of in a landfill, the RCRA Land Disposal Restrictions are not considered to be an ARAR because the material is not a RCRA-restricted waste.

3. Cost-Effectiveness

The selected alternative has a cost proportionate to its effectiveness. Off-site landfilling is the lowest cost alternative which removes the contamination from the Site, and the selected remedy calls for such disposal of the bulk of the material. However, due to the preference for treatment under CERCLA, the most highly contaminated material at the Site requires treatment. Off-site incineration is the most cost-effective method for the treatment of this small volume of highly contaminated material.

4. Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable

EPA and the State of New York have determined that the selected remedy utilizes permanent solutions to the maximum extent practicable. Of those alternatives that are protective of human health and the environment and comply with ARARs, EPA and the State of New York believe that the selected remedy provides the best balance of trade-offs in terms of the five balancing criteria; long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, short-term effectiveness, implementability, and cost. The modifying considerations of State and community acceptance also play a part in this determination.

The long-term effectiveness and permanence of the selected alternative is very high in that the soils with the highest concentration of PCBs are being thermally destroyed, which is the most effective proven technology for treating PCBs. In addition, soils with concentrations greater than the 10 ppm action level and less than 500 ppm will be removed from the Site and disposed of in a chemical waste landfill. Therefore, residual contamination at the Site will be low enough that no long-term monitoring, deed restrictions, or five-year review would be required.

As stated above, the most highly contaminated soils will be thermally destroyed, so the selected remedy follows the statutory preference for remedies which utilize treatment to reduce the toxicity, mobility, or volume of the contamination. However, the bulk of the material will not be treated. Rather, it will be disposed of in an off-site chemical waste landfill. This remedial option is justified by the other balancing criteria. On-site treatment alternatives would require pilot studies which are expensive and add to the overall remediation time. Because of the relatively small volume of soil to be remediated at the Site, the on-site alternatives would not be effective in the short-term or with respect to cost. The implementation of off-site thermal treatment for <u>all</u> of the PCB-contaminated soil might be difficult because of limited capacity at TSCA permitted facilities. In addition, off-site incineration of soils contaminated with 10 to 500 ppm concentration PCBs would not be cost effective because of the great expense to incinerate soil with relatively low concentrations of PCBs.

The cost of the selected remedy is the least costly of the remedies that are protective of human health and the environment and that provide for treatment of the most hazardous material.

5. Preference for Treatment as a Principal Element

The selected remedy provides for the thermal destruction of the PCB-contaminated soils that represent the principal threat: i.e., the soil with concentrations over 500 ppm. This is only a small portion of the total volume of soils to be remediated. There are 36 cubic yards of soil with concentrations exceeding 500 ppm, compared to roughly 1100 cubic yards of soil with concentrations between 10 ppm and 500 ppm. However, treatment of all of the soil is not cost-effective for the reduction of risk that would be achieved. Off-site thermal destruction would be very costly, while on-site remedies would be impractical due to the relatively small volume of material to be treated. Therefore, the statutory preference for remedies that employ treatment as a principal element is satisfied.

The contamination in former Sump 5 is at a relatively low level, and has approximately 10 feet of cover material over it, so that it does not warrant inclusion in this remedial action.

APPENDIX A

HRC 001 1760

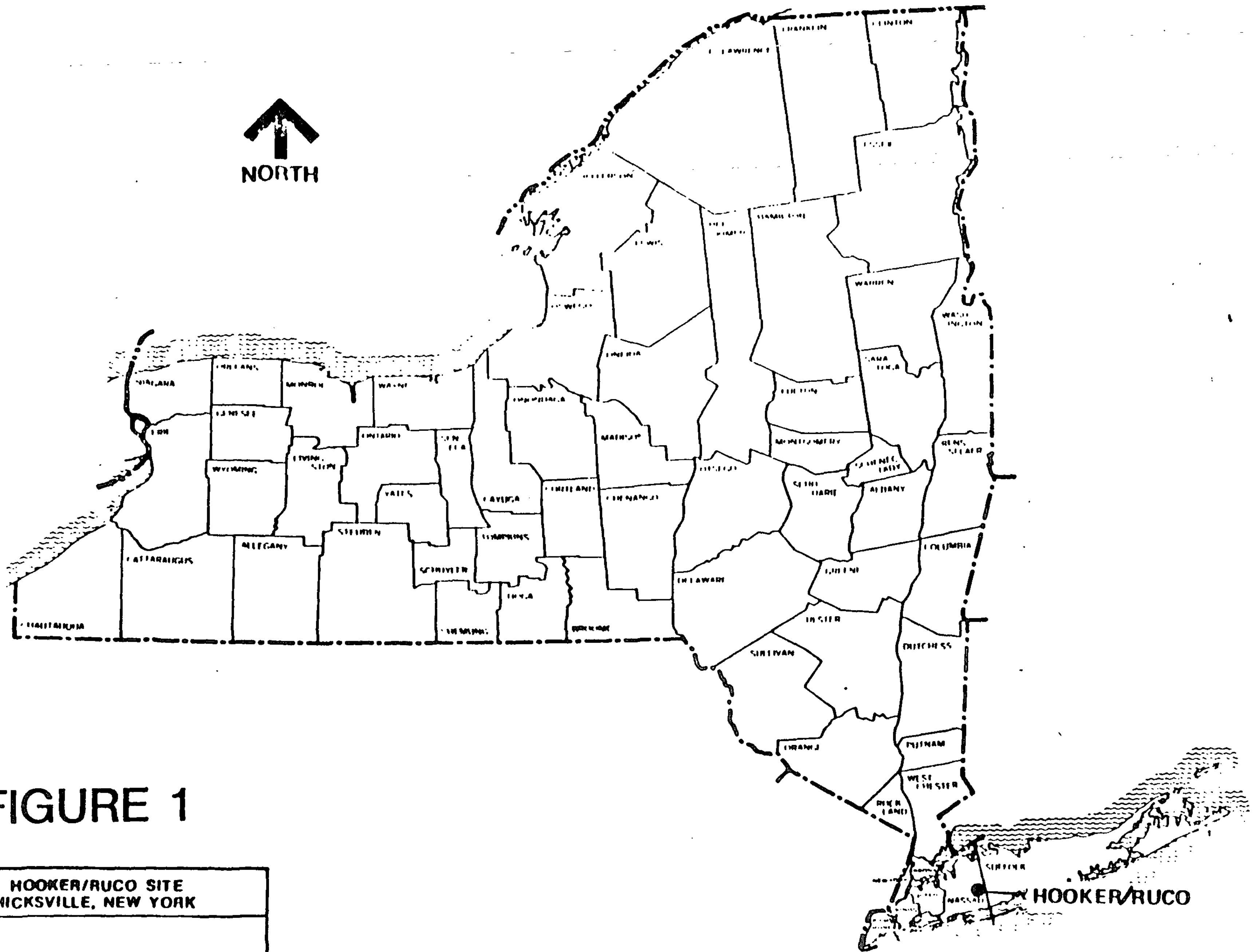
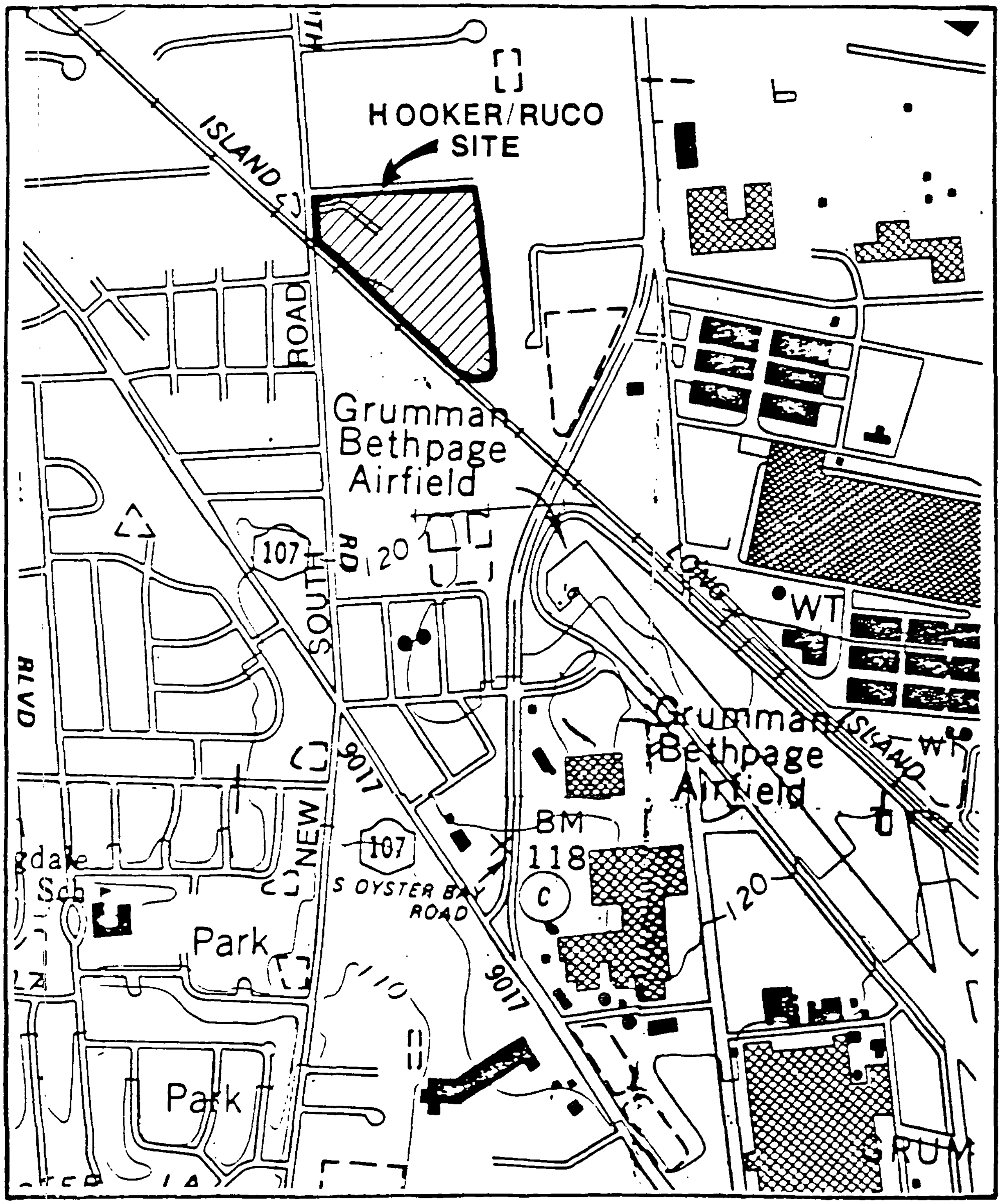


FIGURE 1

HOOKER/RUCO SITE HICKSVILLE, NEW YORK
REGIONAL LOCATION

HRC 001 1761



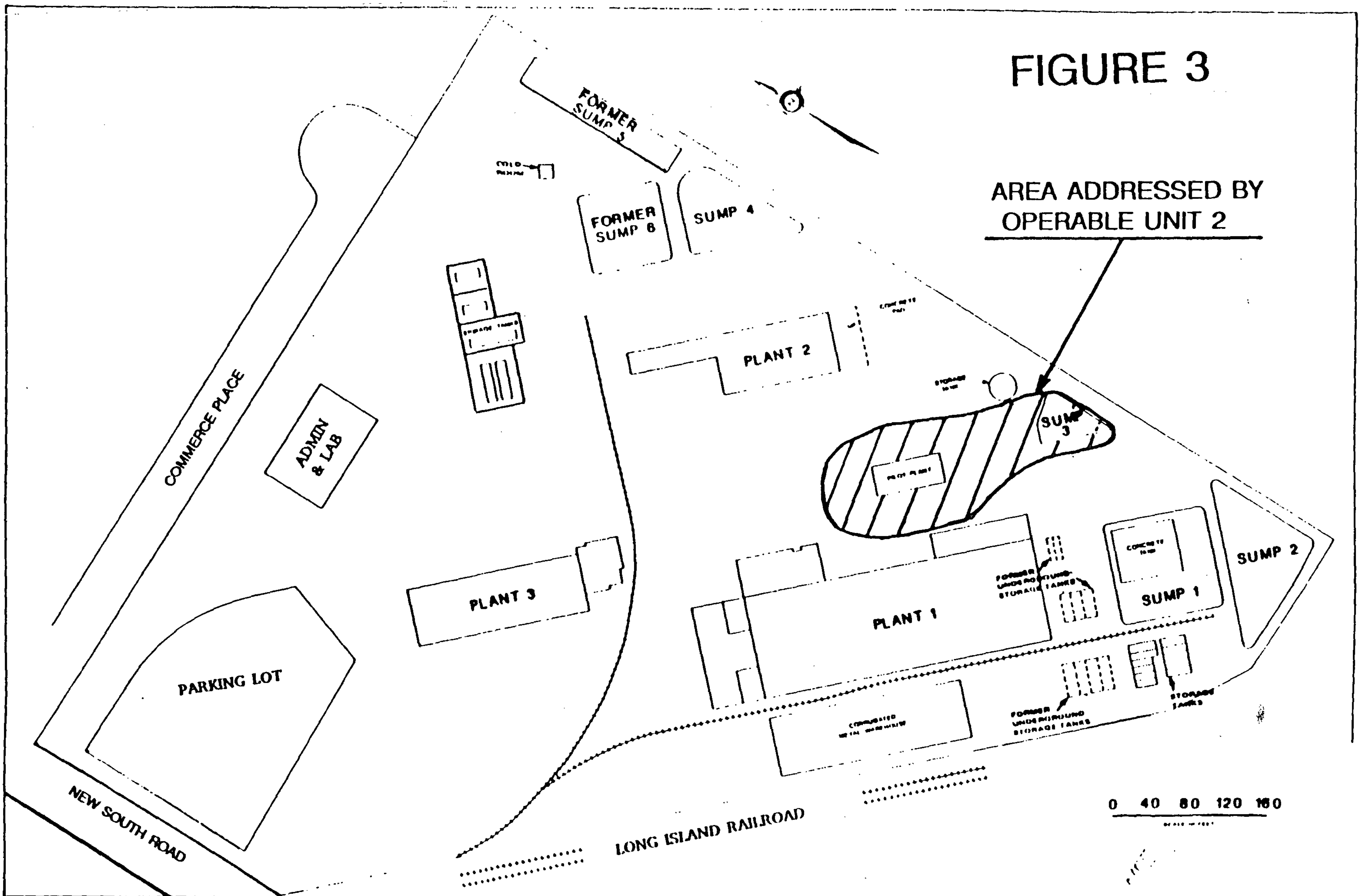
HOOKER/RUCO SITE
HICKSVILLE, NEW YORK

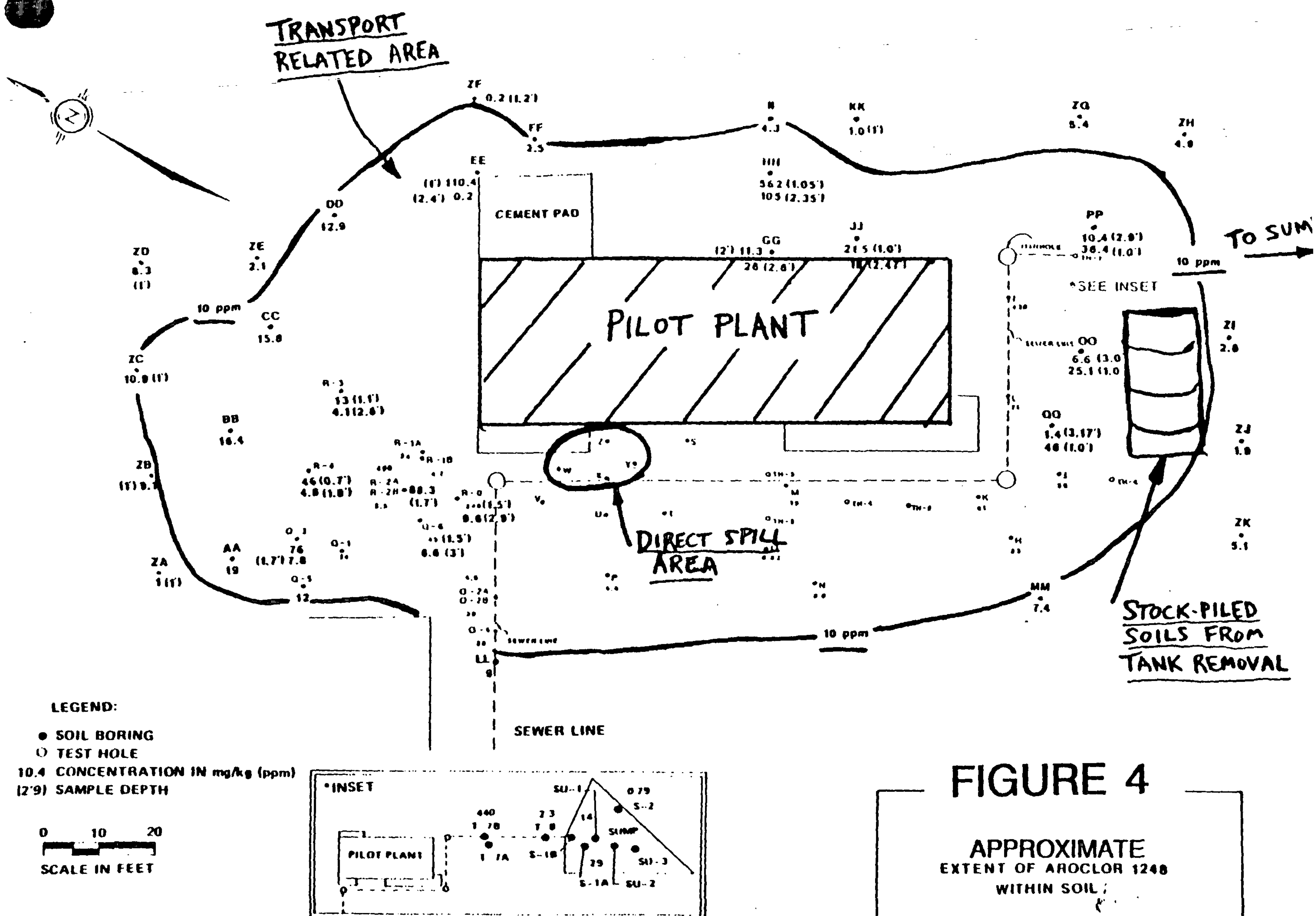
SITE LOCATION

FIGURE 2

HRC 001 1762

FIGURE 3


AREA ADDRESSED BY
OPERABLE UNIT 2
FORMER SUMP 5
FORMER SUMP 6
SUMP 4
PLANT 2
SUMP 3
COMMERCE PLACE
ADMIN & LAB
PLANT 3
PLANT 1
SUMP 1
SUMP 2
FORMER UNDERGROUND STORAGE TANKS
STORAGE TANKS
FORMER UNDERGROUND STORAGE TANKS
PARKING LOT
NEW SOUTH ROAD
LONG ISLAND RAILROAD
0 40 80 120 160



LEGEND:
- ● SOIL BORING
- O TEST HOLE
- 10.4 CONCENTRATION IN mg/kg (ppm)
- (2'9) SAMPLE DEPTH

0 10 20
SCALE IN FEET

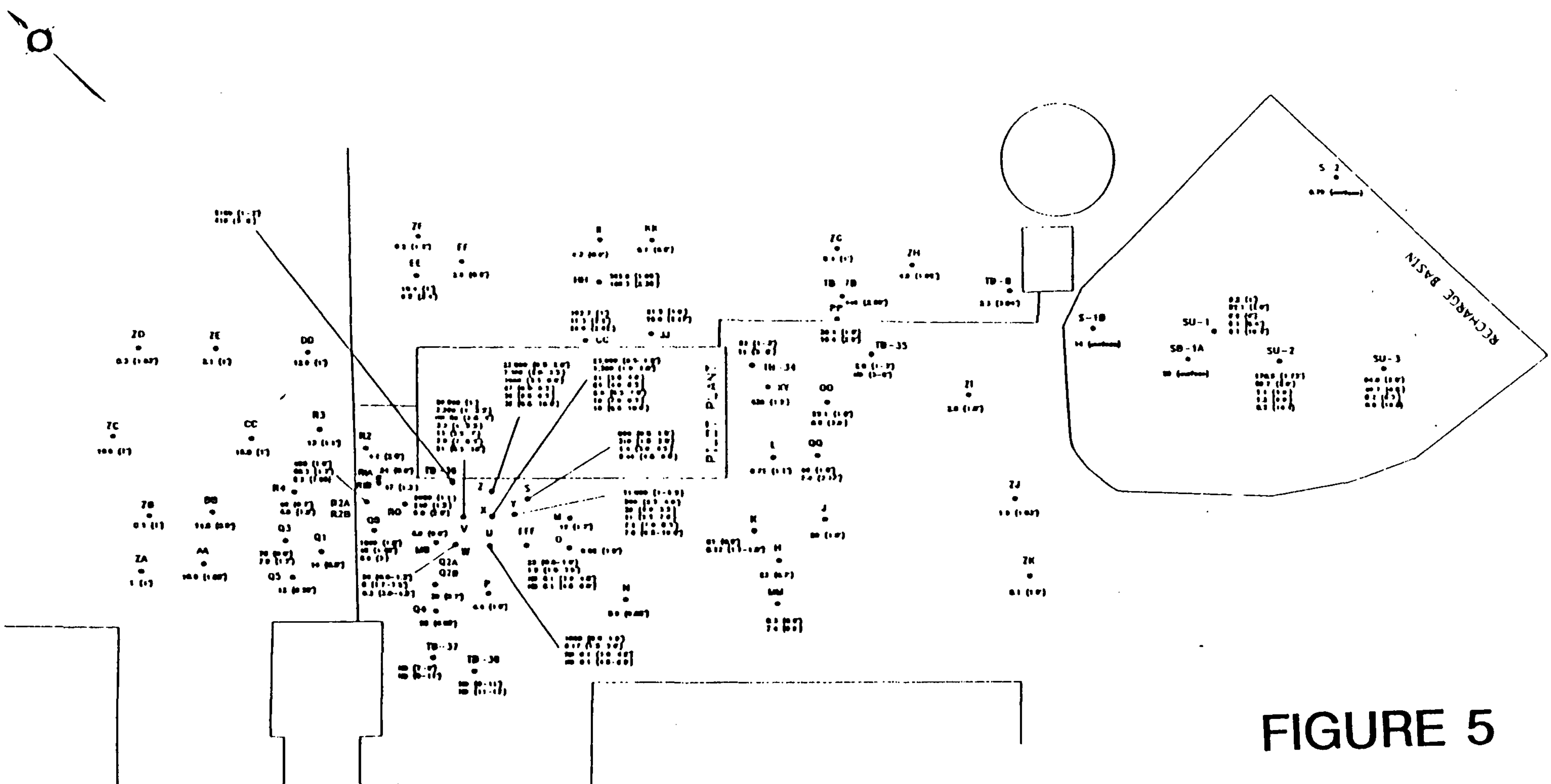
FIGURE 4

APPROXIMATE
EXTENT OF AROCLOR 1248
WITHIN SOIL

(VALUES ARE CONCENTRATIONS OF AROCLOR 1248 IN THE SOIL SAMPLES IN MILLGRAMS PER KILOGRAM)

ADAPTED FROM LEGGETTE, BRASHEARS AND GRAHAM, 1988

HRC 001 1764



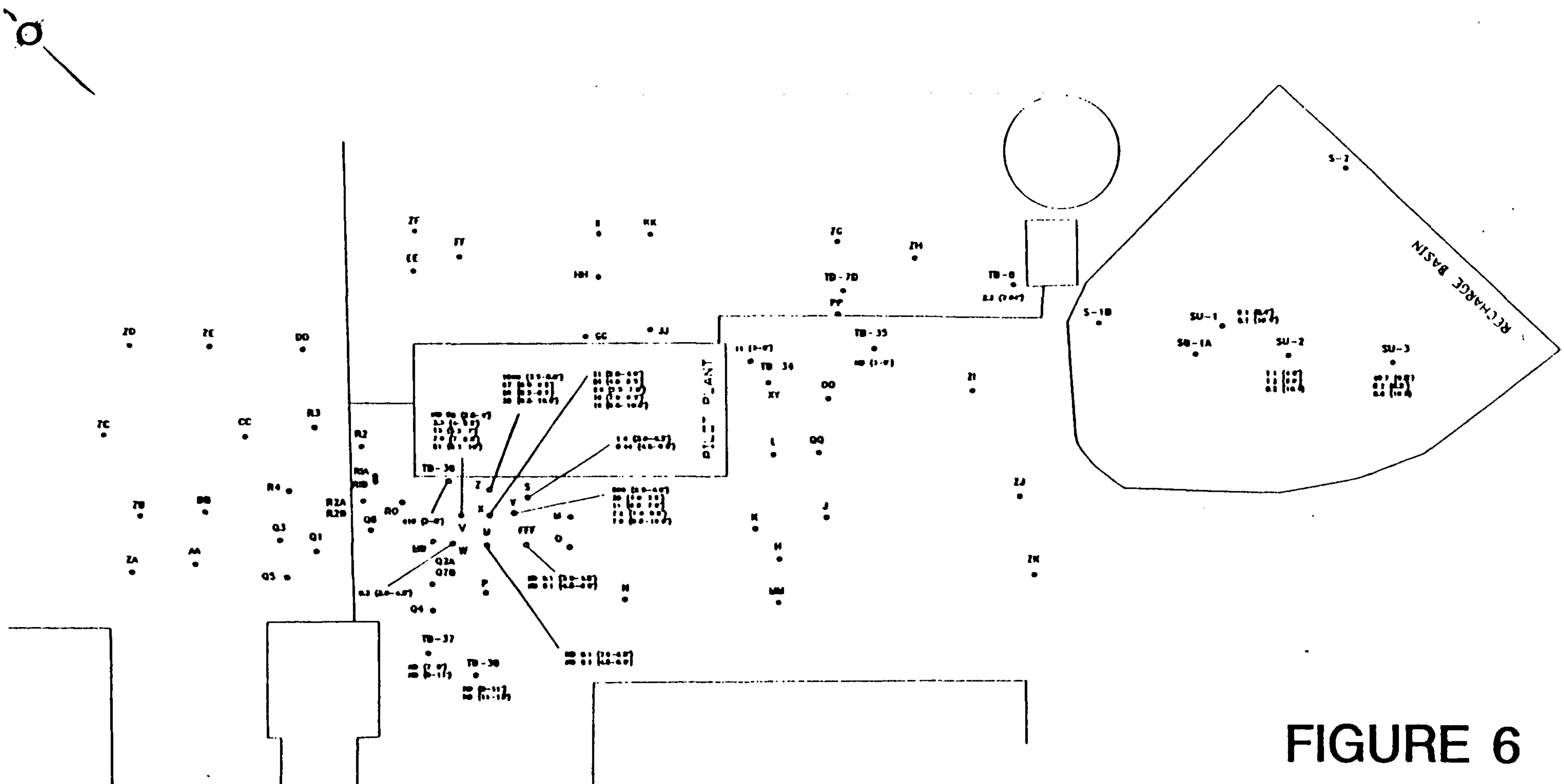
NOTE: ALL UNITS PPM.

FIGURE 5

US ENVIRONMENTAL PROTECTION AGEN

HOOKER RUCO SITE

SOIL SAMPLING ANALYTICAL RESULTS FOR AROCLOR - 1248



ALL UNITS PPM.

FIGURE 6

US ENVIRONMENTAL PROTECTION AGENCY

HOOKER RUCO SITE

SUBSURFACE SOIL SAMPLING
ANALYTICAL RESULTS FOR AROCLOR - 1248

HRC 001 1766

APPENDIX B

TABLE 1

Hooker/Ruco Site
Tabulation of LBG Data

SOURCE : LBG FFS (1989) , PLATE 2 ; LBG RI (1990)

Location :	Sampling Range : (feet)	Aroclor-1248 Concentration: (ppm)
Soil Borings		
AA	1.1	19.00
BB	0.9	14.50
CC	1.0	15.80
DD	1.0	12.90
EE	1.0	10.40
EE	2.4	0.20
FF	0.9	2.50
FFF-1	0.6 - 1.0	25.00
FFF-2	1.6 - 3.0	1.50
FFF-3	3.0 - 4.5	ND 0.1
FFF-4	4.5 - 6.0	ND 0.1
GG-1	1.0	192.70
GG-2	2.2	11.30
GG-3	2.6	26.00
H	0.7	23.00
HH-1	1.1	562.00
HH-2	2.3	105.30
II	0.9	4.30
J	1.0	59.00
JJ-1	1.0	21.50
JJ-2	2.5	16.00
K-1	0.9	61.00
K-2	1.7 - 1.8	0.20
KK	0.9	0.70
L	1.1	0.70
M	1.7	15.00
MB	0.6	4.90
MM-1	0.6	8.30
MM-2	0.9	7.40
N	0.9	8.00
O	1.9	0.80
OO	1.0	25.10
OO	3.0	6.60
P	1.0	4.40
PP-1	1.0	36.40
PP-2	2.9	10.40
Q1	0.8	14.00

HRC 001 1768

TABLE 2

HOOKER/RUCO SITE
AROCLOR-1248 CONCENTRATION RANGE, FREQUENCY OF DETECTION AND MEAN VALUE

Surface Soils (0-3 feet)

	Range of Detected Values	Frequency of Detection	Upper 95% Confidence Interval
Aroclor-1248	0.17-23000	116 of 116	2188

Subsurface Soils (<3 feet)

	Range of Detected Values	Frequency of Detection	Upper 95% Confidence Interval
Aroclor-1248	0.10-1900	32 of 42	692

Note: All units in ppm.

6/6/90

TABLE 3

Hooker/Ruco Site
Surface Soil Ingestion Present-Use Pathway Model
RISKS TO SITE WORKERS

CARCINOGENS - AVERAGE SURFACE SOIL INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = Soil Conc X Soil Intake X Bioavail. Factor X $\frac{1}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days/Year}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$ X $\frac{1\text{kg}}{10^6\text{ mg}}$

Chronic Daily Intake (mg/kg-day) = mg/kg X 100 mg/day X 0.15 X $\frac{1}{70\text{ kg}}$ X $\frac{185\text{ days}}{365\text{ days}}$ X $\frac{9\text{ yrs}}{75\text{ yrs}}$ X $\frac{1\text{kg}}{10^6\text{ mg}}$

Group	Compound	Soil Conc. (mg/kg)	Intake (mg/day)	Bio-availability Factor	Body Weight (kg)	Days Exposed / Days/Year	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
Adults	AROCLOR-1248	2.19E+03	100	0.15	70	5.07E-01	1.20E-01	2.85E-05	7.70E+00	2.20E-

CARCINOGENS - REASONABLE MAXIMUM SURFACE SOIL INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = Soil Conc X Soil Intake X Bioavail. Factor X $\frac{1}{\text{Body Wt.}}$ X $\frac{\text{Days Exposed}}{\text{Days/Year}}$ X $\frac{\text{Years Exposed}}{\text{Years Lifetime}}$ X $\frac{1\text{kg}}{10^6\text{ mg}}$

Chronic Daily Intake (mg/kg-day) = mg/kg X 100 mg/day X 0.15 X $\frac{1}{70\text{ kg}}$ X $\frac{195\text{ days}}{365\text{ days}}$ X $\frac{30\text{ yrs}}{75\text{ yrs}}$ X $\frac{1\text{kg}}{10^6\text{ mg}}$

Group	Compound	Soil Conc. (mg/kg)	Intake (mg/day)	Bio-availability Factor	Body Weight (kg)	Days Exposed / Days/Year	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
Adults	AROCLOR-1248	2.19E+03	100	0.15	70	5.34E-01	4.00E-01	1.00E-04	7.70E+00	7.71E-0

HRC 001 1770

Hooker/Ruco Site
Surface Soil Ingestion Present-Use Pathway Model
RISKS TO TRESSPASSERS

CARCINOGENS - AVERAGE SURFACE SOIL INGESTION EXPOSURE

hronic Daily Intake (mg/kg-day) = Soil Conc X Soil Intake X Bioavail. Factor X 1 / Body Wt. X Days Exposed / Days/Year X Years Exposed / Years Lifetime X 1kg / 10^6 mg

hronic Daily Intake (mg/kg-day) = mg/kg X 100 mg/day X 0.15 X 1 / 56 kg X 80 days / 365 days X 5 yrs / 75 yrs X 1kg / 10^6 mg

Group	Compound	Soil Conc. (mg/kg)	Intake (mg/day)	Bio-availability Factor	Body Weight (kg)	Days Exposed / Days/Year	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
Adults	AROCLOR-1248	2.19E+03	100	0.15	56	2.19E-01	6.67E-02	8.56E-06	7.70E+00	6.59E-0

CARCINOGENS - REASONABLE MAXIMUM SURFACE SOIL INGESTION EXPOSURE

hronic Daily Intake (mg/kg-day) = Soil Conc X Soil Intake X Bioavail. Factor X 1 / Body Wt. X Days Exposed / Days/Year X Years Exposed / Years Lifetime X 1kg / 10^6 mg

hronic Daily Intake (mg/kg-day) = mg/kg X 200 mg/day X 0.15 X 1 / 56 kg X 160 days / 365 days X 5 yrs / 75 yrs X 1kg / 10^6 mg

Group	Compound	Soil Conc. (mg/kg)	Intake (mg/day)	Bio-availability Factor	Body Weight (kg)	Days Exposed / Days/Year	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
Adults	AROCLOR-1248	2.19E+03	200	0.15	56	4.38E-01	6.67E-02	3.43E-05	7.70E+00	2.64E-04

Hooker/Ruco Site
Surface Soil Direct Contact Present-Use Pathway Model
RISKS TO SITE WORKERS

CARCINOGENS - AVERAGE SURFACE SOIL CONTACT EXPOSURE

Chronic Daily Intake (mg/kg-day	Soil Conc	x	Skin Surface Area	x	Bioavail. Factor	x	Skin Deposition	x	1 / Body Wt	x	Days Exposed / Days/Year	x	Years Exposed / Years Lifetime	x	1 kg / 10^6 mg
Chronic Daily Intake (mg/kg-day	mg/kg	x	3510 cm^2	x	6.00E-03	x	0.5 mg/cm^2	x	1 / 70 kg	x	185 days / 365 days	x	9 yrs / 75 yrs	x	1 kg / 10^6 mg

Group	Compound	Soil Conc (mg/kg)	Skin Surface Area (cm^2)	Bio-availability Factor	Skin Deposition (mg/cm^2)	Body Weight (kg)	Days Exposed / Days/Year	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
Adults	AROCLOR-1248	2.19E+03	3.51E+03	6.00E-03	0.5	70	5.07E-01	1.20E-01	2.00E-05	7.70E+00	1.54E-04

CARCINOGENS - REASONABLE MAXIMUM SURFACE SOIL CONTACT EXPOSURE

Chronic Daily Intake (mg/kg-day	Soil Conc	x	Skin Surface Area	x	Bioavail. Factor	x	Skin Deposition	x	1 / Body Wt	x	Days Exposed / Days/Year	x	Years Exposed / Years Lifetime	x	1 kg / 10^6 mg
Chronic Daily Intake (mg/kg-day	mg/kg	x	8320 cm^2	x	1.20E-02	x	1.0 mg/cm^2	x	1 / 70 kg	x	195 days / 365 days	x	30 yrs / 75 yrs	x	1 kg / 10^6 mg

Group	Compound	Soil Conc (mg/kg)	Skin Surface Area (cm^2)	Bio-availability Factor	Skin Deposition (mg/cm^2)	Body Weight (kg)	Days Exposed / Days/Year	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
Adults	AROCLOR-1248	2.19E+03	8.32E+03	1.20E-02	1.0	70	5.34E-01	4.00E-01	6.67E-04	7.70E+00	5.14E-03

6/6/90

Hooker/Ruco Site
Surface Soil Direct Contact Present-Use Pathway Model
RISKS TO TRESPASSERS

CARCINOGENS - AVERAGE SURFACE SOIL CONTACT EXPOSURE

Chronic Daily Intake (mg/kg-day) = Soil Conc X Skin Surface Area X Bioavail. Factor X Skin Deposition X 1/Body Wt X Days Exposed/Days/Year X Years Exposed/Years Lifetime X 1 kg/10^6 mg

Chronic Daily Intake (mg/kg-day) = mg/kg X 3510 cm^2 X 6.00E-03 X 0.5 mg/cm^2 X 1/70 kg X 80 days/365 days X 5 yrs/75 yrs X 1 kg/10^6 mg

Group	Compound	Soil Conc (mg/kg)	Skin Surface Area (cm^2)	Bio-availability Factor	Skin Deposition (mg/cm^2)	Body Weight (kg)	Days Exposed / Days/Year	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
Adults	AROCLOR-1248	2.19E+03	3.51E+03	6.00E-03	0.5	70	2.19E-01	6.67E-02	4.81E-06	7.70E+00	3.70E-05

CARCINOGENS - REASONABLE MAXIMUM SURFACE SOIL CONTACT EXPOSURE

Chronic Daily Intake (mg/kg-day) = Soil Conc X Skin Surface Area X Bioavail. Factor X Skin Deposition X 1/Body Wt X Days Exposed/Days/Year X Years Exposed/Years Lifetime X 1 kg/10^6 mg

Chronic Daily Intake (mg/kg-day) = mg/kg X 8320 cm^2 X 1.20E-02 X 1.0 mg/cm^2 X 1/70 kg X 160 days/365 days X 5 yrs/75 yrs X 1 kg/10^6 mg

Group	Compound	Soil Conc (mg/kg)	Skin Surface Area (cm^2)	Bio-availability Factor	Skin Deposition (mg/cm^2)	Body Weight (kg)	Days Exposed / Days/Year	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
Adults	AROCLOR-1248	2.19E+03	8.32E+03	1.20E-02	1.0	70	4.38E-01	6.67E-02	9.12E-05	7.70E+00	7.02E-04

HRC 001 1773

Hooker/Ruco Site
Subsurface Soil Ingestion Future-Use Pathway Model
RISKS TO CONSTRUCTION WORKERS

CARCINOGENS - AVERAGE SUBSURFACE SOIL INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day)	= Soil Conc	X	Soil Intake	X	Bioavail. Factor	X	1 / Body Wt.	X	Days Exposed / Days/Year	X	Years Exposed / Years Lifetime	X	1kg / 10`6 mg
Chronic Daily Intake (mg/kg-day)	= mg/kg	X	100 mg/day	X	0.15	X	1 / 70 kg	X	185 days / 365 days	X	1 yrs / 75 yrs	X	1kg / 10`6 mg

Compound	Soil Conc (mg/kg)	Intake (mg/day)	Bio-availability Factor	Body Weight (kg)	Days Exposed / Days/Yr	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
AROCLOR-1248	6.92E+02	100	0.15	70	5.07E-01	1.33E-02	1.00E-06	7.70E+00	7.72E-06

CARCINOGENS - REASONABLE MAXIMUM SUBSURFACE SOIL INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day)	= Soil Conc	X	Soil Intake	X	Bioavail. Factor	X	1 / Body Wt.	X	Days Exposed / Days/Year	X	Years Exposed / Years Lifetime	X	1kg / 10`6 mg
Chronic Daily Intake (mg/kg-day)	= mg/kg	X	100 mg/day	X	0.15	.	1 / 70 kg	X	195 days / 365 days	X	3 yrs / 75 yrs	X	1kg / 10`6 mg

Compound	Soil Conc (mg/kg)	Intake (mg/day)	Bio-availability Factor	Body Weight (kg)	Days Exposed / Days/Yr	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
AROCLOR-1248	6.92E+02	100	0.15	70	5.34E-01	4.00E-02	3.17E-06	7.70E+00	2.44E-05

HRC 001 1774

6/6/90

Hooker/Ruco Site
Subsurface Soil Ingestion Future-Use Pathway Model
RISKS TO RESIDENTS

CARCINOGENS - AVERAGE SUBSURFACE SOIL INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = Soil Conc X Soil Intake X Bioavail. Factor X 1 / Body Wt. X Days Exposed / Days/Year X Years Exposed / Years Lifetime X 1kg / 10^-6 mg

Chronic Daily Intake (mg/kg-day) = mg/kg X 100 mg/day X 0.15 X 1 / 70 kg X 43 days / 365 days X 9 yrs / 75 yrs X 1kg / 10^-6 mg

Group	Compound	Soil Conc. (mg/kg)	Intake (mg/day)	Bio-availability Factor	Body Weight (kg)	Days Exposed / Days/Year	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
Adults	AROCLOR-1248	6.92E+02	100	0.15	70	1.18E-01	1.20E-01	2.10E-06	7.70E+00	1.61E-05

CARCINOGENS - REASONABLE MAXIMUM SUBSURFACE SOIL INGESTION EXPOSURE

Chronic Daily Intake (mg/kg-day) = Soil Conc X Soil Intake X Bioavail. Factor X 1 / Body Wt. X Days Exposed / Days/Year X Years Exposed / Years Lifetime X 1kg / 10^-6 mg

Chronic Daily Intake (mg/kg-day) = mg/kg X 100 mg/day X 0.15 X 1 / 70 kg X 130 days / 365 days X 30 yrs / 75 yrs X 1kg / 10^-6 mg

Group	Compound	Soil Conc. (mg/kg)	Intake (mg/day)	Bio-availability Factor	Body Weight (kg)	Days Exposed / Days/Year	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
Adults	AROCLOR-1248	6.92E+02	100	0.15	70	3.56E-01	4.00E-01	2.11E-05	7.70E+00	1.63E-04

HRC 001 1775

Hooker/Ruco Site
Subsurface Soil Direct Contact Future-Use Pathway Model
RISKS TO CONSTRUCTION WORKERS

CARCINOGENS - AVERAGE SUBSURFACE SOIL DIRECT CONTACT EXPOSURE

Chronic Daily Intake (mg/kg-day) = Soil Conc x Skin Surface Area x Bioavail. Factor x Skin Deposition x 1 / Body Wt x Days Exposed / Days/Year x Years Exposed / Years Lifetime x 1 kg / 10^6 mg

Chronic Daily Intake (mg/kg-day) = mg/kg x 3510 cm^2 x 6.00E-03 x 0.5 mg/cm^2 x 1 / 70 kg x 185 days / 365 days x 1 yrs / 75 yrs x 1 kg / 10^6 mg

Compound	Soil Conc (mg/kg)	Skin Surface Area (cm^2)	Bio-availability Factor	Skin Deposition (mg/cm^2)	Body Weight (kg)	Days Exposed / Days/Yr	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
AROCLOR-1248	6.92E+02	3510	6.00E-03	0.50	70	5.07E-01	1.33E-02	7.03E-07	7.70E+00	5.42E-06

CARCINOGENS - MAXIMUM SUBSURFACE SOIL DIRECT CONTACT EXPOSURE

Chronic Daily Intake (mg/kg-day) = Soil Conc x Skin Surface Area x Bioavail. Factor x Skin Deposition x 1 / Body Wt x Days Exposed / Days/Year x Years Exposed / Years Lifetime x 1 kg / 10^6 mg

Chronic Daily Intake (mg/kg-day) = mg/kg x 8320 cm^2 x 1.20E-02 x 1.0 mg/cm^2 x 1 / 70 kg x 195 days / 365 days x 3 yrs / 75 yrs x 1 kg / 10^6 mg

Compound	Soil Conc (mg/kg)	Skin Surface Area (cm^2)	Bio-availability Factor	Skin Deposition (mg/cm^2)	Body Weight (kg)	Days Exposed / Days/Yr	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
AROCLOR-1248	6.92E+02	8320	1.20E-02	1.00	70	5.34E-01	4.00E-02	2.11E-05	7.70E+00	1.62E-04

Hooker/Ruco Site
Subsurface Soil Direct Contact Future-Use Pathway Model
RISKS TO RESIDENTS

CARCINOGENS - AVERAGE SUBSURFACE SOIL CONTACT EXPOSURE

Chronic Daily Intake (mg/kg-day)	Soil Conc	X Skin Surface Area	X Bioavail. Factor	X Skin Deposition	X 1 / Body Wt	X Days Exposed / Days/Year	X Years Exposed / Years Lifetime	X 1 kg / 10^6 mg
Chronic Daily Intake (mg/kg-day)	mg/kg	X 3510 cm^2	X 6.00E-03	X 0.5 mg/cm^2	X 1 / 70 kg	X 43 days / 365 days	X 9 yrs / 75 yrs	X 1 kg / 10^6 mg

Group	Compound	Soil Conc (mg/kg)	Skin Surface Area (cm^2)	Bio-availability Factor	Skin Deposition (mg/cm^2)	Body Weight (kg)	Days Exposed / Days/Year	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
Adults	AROCLOR-1248	6.92E+02	3.51E+03	6.00E-03	0.5	70	1.18E-01	1.20E-01	1.47E-06	7.70E+00	1.13E-(

CARCINOGENS - REASONABLE MAXIMUM SUBSURFACE SOIL CONTACT EXPOSURE

Chronic Daily Intake (mg/kg-day)	Soil Conc	X Skin Surface Area	X Bioavail. Factor	X Skin Deposition	X 1 / Body Wt	X Days Exposed / Days/Year	X Years Exposed / Years Lifetime	X 1 kg / 10^6 mg
Chronic Daily Intake (mg/kg-day)	mg/kg	X 8320 cm^2	X 1.20E-02	X 1.0 mg/cm^2	X 1 / 70 kg	X 130 days / 365 days	X 30 yrs / 75 yrs	X 1 kg / 10^6 mg

Group	Compound	Soil Conc (mg/kg)	Skin Surface Area (cm^2)	Bio-availability Factor	Skin Deposition (mg/cm^2)	Body Weight (kg)	Days Exposed / Days/Year	Years Exposed / Years Lifetime	CDI	SF	RISK SF*CDI
Adults	AROCLOR-1248	6.92E+02	8.32E+03	1.20E-02	1.0	70	3.56E-01	4.00E-01	1.41E-04	7.70E+00	1.08E-0

6/6/90

Hooker/Ruco Site
Surface Soil Inhalation Present-Use Pathway Model
<u>DAILY INTAKE OF SITE WORKERS</u>

<u>CARCINOGENS - AVERAGE SURFACE SOIL INHALATION EXPOSURE</u>

$$\text{Chronic Daily Intake (mg/kg-day)} = \text{Soil Conc} \times \text{Susp Soil Conc} \times \text{Length of Exp} \times \text{Inhalation Rate} \times \text{Bioavail. Factor} \times \frac{1}{\text{Body Wt}} \times \frac{\text{Days Exposed}}{\text{Days/Year}} \times \frac{\text{Years Exposed}}{\text{Years Lifetime}} \times \frac{1\ \text{kg}}{10^{6}\ \text{mg}}$$

$$\text{Chronic Daily Intake (mg/kg-day)} = \text{mg/kg} \times 2.76E{+}00\ \text{mg/m}^3 \times 8\ \text{hrs/day} \times 1.4\ \text{m}^3/\text{hr} \times 0.15 \times \frac{1}{70\ \text{kg}} \times \frac{185\ \text{days}}{365\ \text{days}} \times \frac{9\ \text{yrs}}{70\ \text{yrs}} \times \frac{1\ \text{kg}}{10^{6}\ \text{mg}}$$

Compound	Soil Conc (mg/kg)	Susp Soil Conc (mg/m^3)	Length of Exp (hrs/day)	Inhalation Rate (m^3/hr)	Bio-availability Factor	Body Weight (kg)	Days Exposed / Days/Yr	Years Exposed / Years Lifetime	CDI
AROCLOR-1248	2.19E+03	2.76E+00	8.0	1.4	0.15	70	5.07E-01	1.29E-01	9.44E-06

<u>CARCINOGENS - REASONABLE MAXIMUM SURFACE SOIL INHALATION EXPOSURE</u>

$$\text{Chronic Daily Intake (mg/kg-day)} = \text{Soil Conc} \times \text{Susp Soil Conc} \times \text{Length of Exp} \times \text{Inhalation Rate} \times \text{Bioavail. Factor} \times \frac{1}{\text{Body Wt}} \times \frac{\text{Days Exposed}}{\text{Days/Year}} \times \frac{\text{Years Exposed}}{\text{Years Lifetime}} \times \frac{1\ \text{kg}}{10^{6}\ \text{mg}}$$

$$\text{Chronic Daily Intake (mg/kg-day)} = \text{mg/kg} \times 2.76E{+}00\ \text{mg/m}^3 \times 8\ \text{hrs/day} \times 3.0\ \text{m}^3/\text{hr} \times 0.15 \times \frac{1}{70\ \text{kg}} \times \frac{195\ \text{days}}{365\ \text{days}} \times \frac{30\ \text{yrs}}{70\ \text{yrs}} \times \frac{1\ \text{kg}}{10^{6}\ \text{mg}}$$

Compound	Soil Conc (mg/kg)	Susp Soil Conc (mg/m^3)	Length of Exp (hrs/day)	Inhalation Rate (m^3/hr)	Bio-availability Factor	Body Weight (kg)	Days Exposed / Days/Yr	Years Exposed / Years Lifetime	CDI
AROCLOR-1248	2.19E+03	2.76E+00	8.0	3.0	0.15	70	5.34E-01	4.29E-01	7.11E-05

HRC 001 1778

6/6/90

Hooker/Ruco Site
Surface Soil Inhalation Present-Use Pathway Model
DAILY INTAKE OF TRESPASSERS

CARCINOGENS - AVERAGE SURFACE SOIL INHALATION EXPOSURE

Chronic Daily Inta (mg/kg-day)	=	Soil Conc	X	Susp Soil Conc	X	Length of Exp	X	Inhalation Rate	X	Bioavail. Factor	X	1 / Body Wt	X	Days Exposed / Days/Year	X	Years Exposed / Years Lifetime	X	1 kg / 10^-6 mg
Chronic Daily Inta (mg/kg-day)	=	mg/kg	X	2.76E+00 mg/m^3	X	4 hrs/day	X	1.4 m^3/hr	X	0.15	X	1 / 56 kg	X	80 days / 365 days	X	5 yrs / 70 yrs	X	1 kg / 10^-6 mg

Compound	Soil Conc (mg/kg)	Susp Soil Conc (mg/m^3)	Length of Exp (hrs/day)	Inhalation Rate (m^3/hr)	Bio-availability Factor	Body Weight (kg)	Days Exposed / Days/Yr	Years Exposed / Years Lifetime	CDI
AROCLOR-1248	2.19E+03	2.76E+00	4.0	1.4	0.15	56	2.19E-01	7.14E-02	1.42E-06

CARCINOGENS - REASONABLE MAXIMUM SURFACE SOIL INHALATION EXPOSURE

Chronic Daily Into (mg/kg-day)	=	Soil Conc	X	Susp Soil Conc	X	Length of Exp	X	Inhalation Rate	X	Bioavail. Factor	X	1 / Body Wt	X	Days Exposed / Days/Year	X	Years Exposed / Years Lifetime	X	1 kg / 10^-6 mg
Chronic Daily Into (mg/kg-day)	=	mg/kg	X	2.76E+00 mg/m^3	X	4 hrs/day	X	3.0 m^3/hr	X	0.15	X	1 / 56 kg	X	160 days / 365 days	X	5 yrs / 70 yrs	X	1 kg / 10^-6 mg

Compound	Soil Conc (mg/kg)	Susp Soil Conc (mg/m^3)	Length of Exp (hrs/day)	Inhalation Rate (m^3/hr)	Bio-availability Factor	Body Weight (kg)	Days Exposed / Days/Yr	Years Exposed / Years Lifetime	CDI
AROCLOR-1248	2.19E+03	2.76E+00	4.0	3.0	0.15	56	4.38E-01	7.14E-02	6.08E-06

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TABLE 4

Hooker/Ruco Site

SUMMATION OF RISKS POSED BY AROCLOR-1248

PRESENT-USE SCENARIO

	SITE WORKERS		TRESPASSERS	
PATHWAY :	Average Cancer Risk	Reasonable Maximum Cancer Risk	Average Cancer Risk	Reasonable Maximum Cancer Risk
Ingestion of Soil	2.20E-04	7.71E-04	6.59E-05	2.64E-04
Direct Contact with Soil	1.54E-04	5.14E-03	3.70E-05	7.02E-04
Total Cancer Risk	3.74E-04	5.91E-03	1.03E-04	9.66E-04

FUTURE-USE SCENARIO

	CONSTRUCTION WORKERS		RESIDENTS	
PATHWAY :	Average Cancer Risk	Reasonable Maximum Cancer Risk	Average Cancer Risk	Reasonable Maximum Cancer Risk
Ingestion of Soil	7.72E-06	2.44E-05	1.61E-05	1.63E-04
Direct Contact with Soil	5.42E-06	1.62E-04	1.13E-05	1.08E-03
Total Cancer Risk	1.31E-05	1.86E-04	2.74E-05	1.24E-03

NOTE :

Target Risk Level = 10E-06

APPENDIX C

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233 -7010

Thomas C. Jorling
Commissioner

Mr. Richard L. Caspe, P.E.
Director
Emergency & Remedial Response Division
U.S. Environmental Protection Agency
Region II
26 Federal Plaza
New York, NY 10278

SEP 2 1 1990

Dear Mr. Caspe:

Re: Hooker Chemical/Ruco Polymer Site - ID. No. 130004
Hicksville, Nassau County, New York

The New York State Department of Environmental Conservation (NYSDEC) has reviewed the draft Operable Unit Two Declaration for the Record of Decision (ROD) for the above-referenced site. The NYSDEC concurs with the selected remedy which includes the excavation of PCB-contaminated soil in excess of 10 ppm, disposal of 10 to 500 ppm PCB-contaminated soil (1100 cu. yds.) in a Toxic Substances Control Act (TSCA) permitted chemical landfill, treatment of soil contaminated above 500 ppm (36 cu. yds.) at an off-site thermal destruction facility, backfilling with clean soil and repaving.

Please note that our designation of Operable Unit Two for PCB-contaminated soil is consistent with the Proposed Remedial Action Plan, dated July 1990. On page 3, paragraph 3, of the Decision Summary of the Draft ROD, the designation of operable units should be corrected accordingly.

If you have any questions, please contact Mr. Kamal Gupta, of my staff, at (518) 457-3976.

Sincerely,

Edward O. Sullivan
Deputy Commissioner

cc: R. Tramontano, NYSDOH
D. Tomchuk, USEPA, Region II

HRC 001 1782

APPENDIX D

HRC 001 1783

EPA WORK ASSIGNMENT NUMBER: 012-2PX3
EPA CONTRACT NUMBER: 68-W8-0110

EBASCO SERVICES INCORPORATED
ARCS II PROGRAM

FINAL
RESPONSIVENESS SUMMARY
FOR THE
HOOKER CHEMICAL/RUCO POLYMER SITE
HICKSVILLE, NASSAU COUNTY
NEW YORK

SEPTEMBER 1990

NOTICE

The information in this document has been funded by the United States Environmental Protection Agency (USEPA) under ARCS II Contract No. 68-W8-0110 to Ebasco Services Incorporated (Ebasco).

HRC 001 1784

3335K

DRAFT RESPONSIVENESS SUMMARY
HOOKER CHEMICAL/RUCO POLYMER SITE
HICKSVILLE, NASSAU COUNTY, NEW YORK

The U.S. Environmental Protection Agency (EPA) held a public comment period from July 31, 1990 through August 30, 1990 for interested parties to comment on EPA's Focused Feasibility Study (FFS) and Proposed Plan (PP) for remedial action at the Hooker Chemical/Ruco Polymer (Hooker/Ruco) Superfund Site in Hicksville, New York.

EPA held a public meeting on August 7, 1990 at the Oyster Bay Town Hall, Oyster Bay, New York to describe the remedial alternatives and to present EPA's preferred remedial alternative to clean up the Hooker/Ruco site.

A responsiveness summary is required for the purpose of providing EPA and the public with a summary of citizens' comments and concerns about the site raised during the public comment period and EPA's responses to those concerns. All comments summarized in this document will be considered in EPA's final decision for selection of the remedial alternative for cleanup of the site. The responsiveness summary is organized into the following sections:

I. **Responsiveness Summary Overview.** This section briefly describes the public meeting held on August 7, 1990 and includes historical information about the Hooker/Ruco site.

II. **Background on Community Involvement and Concerns.** This section provides a brief history of community interest and concerns regarding the Hooker/Ruco site.

III. **Major Questions and Comments Received During the Public Comment Period and EPA's Responses to Comments.** This section summarizes comments submitted to EPA at the public meeting and during the public comment period and provides EPA's responses to these comments.

I. RESPONSIVENESS SUMMARY OVERVIEW

A. PUBLIC MEETING AND SITE HISTORY

The public meeting for the Hooker/Ruco site began at 7:30 p.m. on August 7, 1990 with presentations by EPA and was followed by a question and answer session. Approximately 20 residents and local officials attended the meeting.

Melvin Hauptman, Chief, Eastern New York and Caribbean Compliance Section; Douglas Tomchuk, Hooker/Ruco Site Remedial Project Manager; and Ann Rychlenski, Region II Community Relations Coordinator represented EPA. EPA contractor personnel were represented by William Kollar, ARCS II Community Relations Specialist.

Ms. Rychlenski opened the meeting and explained that the purpose of the meeting was to discuss the results of the FFS and to present EPA's preferred remedial alternative for cleanup of the Hooker/Ruco site. Members of the community were encouraged to actively participate and express concerns regarding the site which would be factored into EPA's final Record of Decision (ROD) for the Hooker/Ruco site. They were also informed that EPA would accept comments throughout the remainder of the public comment period, which ended on August 30, 1990. Ms. Rychlenski then introduced Mr. Hauptman.

Mr. Hauptman provided an overview of the Superfund program and explained how a site may be placed on EPA's National Priorities List (NPL) through the Hazardous Ranking System (HRS) process. Placement on the NPL makes a site eligible for federal funding for site remediation. He explained that the initial examination of a site is called the Remedial Investigation (RI) wherein the nature and extent of site contamination is determined. Samples of soil, air, sediment, surface water, and groundwater are collected and analyzed by EPA-approved laboratories. The contaminants detected through this analysis are then evaluated regarding their potential risk to human health and the environment; and the potential routes through which flora or fauna may come into contact with these contaminants are identified. The next stage of the investigation is known as the Feasibility Study (FS). EPA develops a number of alternatives to remediate site contamination based on established criteria. Once these cleanup alternatives are developed and evaluated, EPA prepares a Proposed Plan which presents EPA's preferred remedial alternative(s) for cleanup of the site. This preferred remedial alternative is then presented to state agencies and the public for review and comment. Upon receipt of public and state agency comments, EPA evaluates the responses and factors them into its final selection for a site remedy. A responsiveness summary addressing public comments is then prepared and becomes part of the ROD. The next stage of site cleanup is known as the Remedial Design (RD) phase where the design of the selected remedy is detailed. This is followed by the final, or Remedial Action (RA), phase where the selected remedy is implemented and site cleanup actually occurs. Upon completion of the RA, site closure occurs, and, if necessary, continuing site monitoring may be conducted to ensure the effectiveness of the remedy. The RI/FS can encompass a time frame from 18-24 months; the RD takes 12-18 months; and the RA can take as long as 30 years if the remedy includes the pumping and treatment of contaminated groundwater. If the remedy is as simple as removing items such as drums, remediation can take as little as six months to complete. Mr. Hauptman also discussed EPA enforcement activities under Superfund, including the role of the potentially responsible party (PRP) in assuming responsibility for site remediation. The PRPs for the Hooker/Ruco site are the Occidental Chemical Corporation and the Ruco Polymer Corporation. Mr. Hauptman then introduced Mr. Tomchuk.

Mr. Tomchuk provided a brief site history and a description of past investigative activities conducted by EPA at the site. The Hooker/Ruco site is located on New South Road in Hicksville, an unincorporated community in the Town of Oyster Bay, New York. The site is located within an industrialized area of Hicksville immediately adjacent to Grumman Aerospace Corporation, the largest industrial facility in the area.

Plant operations at Hooker/Ruco began in 1946 when two firms, Insular Chemical Company and Rubber Corporation of America, shared facilities at the site. In 1956 Insular Chemical Company was bought out by Rubber Corporation of America and in 1965 Rubber Corporation of America was purchased by Hooker Chemical Corporation, a subsidiary of the Occidental Chemical Corporation. On March 1, 1982 site ownership was transferred to the Ruco Polymer Corporation, which is the present owner of the site. The site is currently an active manufacturing facility.

Manufacturing processes at the Hooker/Ruco site involve production of polyurethanes, plasticizers, polyvinyl chloride (PVC) and polyesters. Wastewater from manufacturing processes were at one time discharged to open recharge basins. Wastewaters were not monitored and contaminants were not identified until the 1970's. Permits for discharges, i.e., State Pollution Discharge Elimination System (SPDES) permits, were obtained by 1978, although PVC production ceased by 1975 and the sumps were not used for PVC waste water thereafter. Wastes from ester manufacturing were either incinerated or disposed off-site after 1975. Air quality permits were issued as far back as 1968.

County, state and federal sampling of soils and groundwater at Hooker/Ruco has occurred sporadically since the early 1970's. Potential contaminant substances identified within soil and groundwater samples include vinyl chloride, trichloroethylene, tetrachloroethylene and 1,2-dichloroethylene, which are volatile organic compounds, and cadmium, a heavy metal. These substances were used in the manufacture of various polymers at the site.

Sampling and monitoring to determine the extent of contamination at the Hooker/Ruco site was initially undertaken by the Nassau County Department of Health (NCDH) in the early 1970's. In 1976, vinyl chloride contamination was confirmed in wells on the adjacent Grumman Aerospace Corporation properties by the Nassau County Department of Health. At this time Hooker/Ruco was found to be the only site in Nassau County producing vinyl chloride.

The nature of the contamination associated with the site was the subject of several public hearings that were held from 1976 to 1979. It was disclosed during the hearings that Hooker/Ruco had been disposing of its wastes in local landfills (Bethpage, Syosset, and Brentwood) and at other locations. The Hooker/Ruco site was eventually listed by the New York State Department of Environmental Conservation (NYSDEC) as a generator of hazardous waste in 1979. Negotiations between the NYSDEC and Hooker/Ruco were initiated in 1981 and concerned site soil and groundwater sampling and cleanup activities. Sample analysis resulted in NYSDEC conducting a more extensive investigation in November 1983 for preliminary characterization of hazardous substances at the site. The site was subsequently placed on EPA's National Priorities List in 1984.

Occidental Chemical and Ruco Polymer have conducted investigations at the site since 1984, as a result of a series of negotiations between NYSDEC and EPA and the PRPs. The two principal studies, both performed by Occidental, were the Remedial Investigation/Feasibility Study (RI/FS) and the Focused Feasibility Study (FFS). The RI/FS addressed soil and groundwater contamination for the majority of the site. RI field investigations were completed in February 1990. A draft RI report was prepared and submitted in April 1990, and is currently being reviewed by EPA and NYSDEC. The FFS was completed in November 1989 and centered on polychlorinated biphenyl (PCB)-contaminated soils surrounding an on-site pilot plant and an adjacent storm water recharge basin. Results of the FFS were incorporated into the Proposed Plan, which was released in July 1990 and analyzes cleanup alternatives for the PCB-contaminated soils. This contamination resulted from manufacturing processes conducted at the pilot plant from 1946 to 1978 which employed Therminol, a heat transfer fluid containing PCBs. During these operations, PCBs were released directly into soils adjacent to the pilot plant. The FFS has determined that some of the contaminated soil was spread from the discharge area to surrounding areas (including the impacted recharge basin) by surface water runoff, sediment transport and truck traffic.

HRC 001 1788

The proposed remedial alternatives discussed in this responsiveness summary focus on the PCB-contaminated soils around the pilot plant, designated as Operable Unit (OU) 2 by EPA. It is expected that some additional field work will be required prior to finalizing the FS for soil and groundwater contamination for the remainder of the site, designated as OU 1.

HRC 001 1789

II. BACKGROUND AND COMMUNITY INVOLVEMENT AND CONCERNS

Public concern regarding pollution at the Hooker/Ruco site first surfaced in 1976 when vinyl chloride contamination was detected in wells at the Grumman Aerospace Corporation facility adjacent to the site. In response to this and other potentially harmful site conditions, environmental action groups staged demonstrations at Hooker/Ruco in an attempt to close plant operations. The site was frequently linked in media accounts to the Love Canal Superfund site in Niagara Falls, New York, since the Hooker Chemical Company owned both sites. Media interest peaked when Long Island Newsday published a cover story on contamination at the Hooker/Ruco site.

Community interest declined by the early 1980's as the public perceived that authorities were implementing a cleanup plan and monitoring program for the site. When citizens were subsequently informed that an RI/FS was planned for the site, they expressed surprise that site clean up activities were not yet underway.* Public concerns regarding the perceived slow pace of site remediation were again expressed upon release of the FFS and the Proposed Plan addressing the PCB-contaminated soils, although the overall level of public involvement among area residents continues to be low.

A Final Community Relations Plan for the Hooker/Ruco site was completed by EPA in July 1988. Input received at that time indicated the following issues to be of community concern: the potential for and extent of groundwater contamination; liability of site owners; cleanup schedule and funding, and; potential negative impacts on local property values.

* EPA met with citizen's groups on November 3, 1988 and March 8, 1989 to discuss the field activities to be performed during the RI/FS.

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III. SUMMARY OF MAJOR QUESTIONS AND COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD AND EPA RESPONSES TO THESE COMMENTS

Issues and questions raised during the public comment period for the Hooker/Ruco site are summarized below and are organized into the following categories:

A. Groundwater Contamination
B. Technical Concerns
C. Cleanup Funding and Schedule/Other Concerns
D. Written Comment

A. GROUNDWATER CONTAMINATION

1. COMMENT: A resident asked if any groundwater contamination has occurred at the site and, if so, has the contamination caused any known public health effects.

   EPA RESPONSE: Some contamination was detected in samples taken from monitoring wells in 1984-85. The RI results which are currently being reviewed by EPA and NYSDEC will further identify the nature and extent of this contamination. Preliminary results from RI sampling activities indicate the presence of trichloroethylene and vinyl chloride. Regarding potential public health effects, the Nassau County Health Department monitors drinking water supplies in the site area on a quarterly basis. These supplies currently meet New York State Department of Health Standards.

2. COMMENT: A resident asked if any PCB contamination has been detected in groundwater or monitoring wells at the site.

   EPA RESPONSE: PCBs have not been detected in groundwater at the site. The Focused Feasibility Study for PCB-contaminated soils around the pilot plant showed that surface water runoff contained particulate matter which included PCBs.

3. COMMENT: A resident inquired whether the organic contaminants detected in the groundwater have migrated from their original sources.

   EPA RESPONSE: Some groundwater in which organic contamination has been detected has moved downgradient from the site. Data gathered during the RI and currently under review by EPA and NYSDEC will more clearly define the extent and direction of the migration.

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B. TECHNICAL CONCERNS

1. COMMENT: A resident asked how long the excavated areas surrounding the pilot plant will need to remain capped before they no longer present any hazard.

   EPA RESPONSE: The remedial alternative proposed by EPA will remove all PCB-contaminated soils in excess of 10 ppm from the pilot plant area. Therefore, the remaining soils, with PCB levels below 10 ppm, are within acceptable limits for an industrial land use and a cap is not required. The primary purpose for replacing the asphalt which currently exists in this area is to allow truck travel during plant operations, but it will also provide further protection from low levels of contamination that remain. This asphalt will be maintained for 30 years.

2. COMMENT: A resident inquired about potential hazards associated with air emissions resulting from thermal destruction of contaminated soils.

   EPA RESPONSE: PCB-contaminated soils removed from the site will be destroyed at an EPA-approved thermal incineration facility which complies with the Toxic Substances Control Act (TSCA). The destruction removal and efficiency rate of 99.9999 required under the TSCA ensures that harmful levels of PCBs are not emitted into the air.

3. COMMENT: A resident asked how much PCB-contaminated soil would be removed from the site and how the removal would be accomplished, including techniques to limit airborne dusts during excavation.

   EPA RESPONSE: Approximately 1100 cubic yards of PCB-contamiated will be removed from the site. The material will be excavated using earth-moving construction equipment and loaded onto dump trucks for transport off-site. Dust suppression could be achieved by wetting the exposed soils during excavation and by covering the open dump truck trailers with tarpaulins during transport. Details of the excavation and removal activities will be determined in the remedial design phase.

4. COMMENT: A resident asked if EPA relied solely on information supplied by the potentially responsible parties regarding the location of toxic materials on the site.

   EPA RESPONSE: The areas investigated during the RI included but were not limited to those identified by the PRPs as waste disposal areas. The RI also extended to areas well beyond anticipated contaminant migration patterns and other locations on the site which were believed by EPA to be potentially contaminated.

5. COMMENT: A Nassau County official asked if any samples taken in the pilot plant area indicated the presence of contaminants other than PCBs.

EPA RESPONSE: Low levels of trichloroethylene and perchloroethylene (estimated valves) were found in soil samples taken from the pilot plant area. These levels do not represent any significant contamination requiring remediation, nor would they change the proposed alternative.

6. COMMENT: A resident asked about the technical basis for EPA's selection of Alternative 10 as the preferred alternative.

EPA RESPONSE: A detailed explanation is presented in the Record of Decision, and is also summarized in EPA's response to Occidental's comments.

7. COMMENT: A Nassau County official asked if contaminated soils excavated during an underground fuel oil tank removal at the site are included in the 1100 cubic yards to be removed under Alternative 10.

EPA RESPONSE: The soils removed during the tank removal operation in 1989, approximately 70 cubic yards, are included in the 1100 yards to be addressed under Alternative 10.

C. CLEANUP FUNDING AND SCHEDULE/OTHER CONCERNS

1. COMMENT: A resident asked if Occidental would assume financial responsibility for site remediation.

EPA RESPONSE: The Superfund process requires negotiations with the PRP regarding the implementation of the remedy after the Record of Decision is issued. Any settlement reached in these negotiations is then incorporated into a court-approved Consent Decree, which binds the PRP to the terms of the settlement. Occidental has thus far expressed willingness to assume financial responsibility for costs associated with site cleanup activities.

2. COMMENT: A resident expressed concerned about the potential lengthy time frame for site remediation and asked if the cleanup schedule could be accelerated.

EPA RESPONSE: The Superfund process includes provisions for a Special Notice Letter to be sent to the PRPs, which gives the PRP 60 days to respond with a good faith offer to perform the remediation and an additional 60 days to reach a comprehensive settlement with the EPA. The additional 60 days is for negotiating the Consent Decree for site remediation.

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However, the PRP could begin Remedial Design work during the public comment period for the Consent Decree.

3. COMMENT: A resident asked if the cost estimate of $995,650 for the preferred alternative would include all costs associated with that alternative.

EPA RESPONSE: The estimate of $995,650 for the preferred alternative is a present worth estimate based on current costs for cleanup activities required for implementation. Actual costs could increase if, for example, additional contaminated soils were identified during confirmatory sampling activities. The actual cost will be for expenses incurred to implement the provisions of the Record of Decision for the site.

4. COMMENT: A resident asked if the emergency notification procedures described in the site Field Operations Plan (FOP) would be applicable for incidents during site remediation activities, specifically those involving the transport of contaminated soils off-site.

EPA RESPONSE: The emergency procedures included in the FOP were operative during RI activities conducted at the site from September 1989 to February 1990. Similar procedures regarding cleanup activities, including transport of contaminated soils, will be developed once the disposal facilities for the PCB-contaminated soils are selected.

5. COMMENT: A resident asked which specific activities in the preferred alternative were covered in the estimated implementation time of 13 months.

EPA RESPONSE: Time to implement, as it is used in the Proposed Plan, includes the estimated time for the preparation of the remedial design, site preparation activities, and actual on-site construction.

6. COMMENT: A resident asked if health risks associated with plant operations had been assessed for plant workers.

EPA RESPONSE: The Endangerment Assessment (EA) conducted by EPA in 1990 evaluated the potential health risks to workers involved in cleanup activities at the site as a worst-case exposure scenario. The EA found that exposure levels for these workers in a future scenario after remediation to 10 ppm would be within the standard

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exposure limits established for all Superfund sites. The EA also assessed risks to plant operations workers assigned eight-hour shifts. Risks to these workers were also determined to be within acceptable limits.

7. COMMENT: A resident asked whether PCBs are known carcinogens.

EPA RESPONSE: PCBs are probable human carcinogens. There is sufficient evidence of their carcinogenicity in animals but inadequate evidence exists regarding humans to conclusively list PCBs as human carcinogens.

8. COMMENT: A resident noted the occasional presence of odors in the vicinity of the Hooker/Ruco site and asked what vapors were released during plant operations and if there were health risks associated with them.

EPA RESPONSE: Air emissions were not addressed in the Focused Feasibility Study regarding PCB-contaminated soils. As far as EPA is aware, glycol is used in some production processes at the site and may account for a sweet odor in the site area. Studies known to EPA have been unable to identify any detectable concentrations of glycol in emissions from the plant, although humans may be sensitive enough to notice it. Glycol is an ingredient in cosmetics and is not considered a carcinogen. Ruco is coordinating with the Nassau County Department of Health to alleviate this problem.

9. COMMENT: A resident asked if the public could be given assurances that prior waste disposal practices (including direct discharge into the ground) would not be resumed by the current owners of the site.

EPA RESPONSE: Waste disposal practices such as direct discharge into groundwater recharge basins occurred at the site prior to the existence of regulations controlling such practices. EPA, NYSDEC and NCDOH are currently regulating waste disposal operations at the site and will continue to enforce all applicable regulations at the Hooker/Ruco site.

10. COMMENT: A resident asked what measures EPA was taking to prevent hazardous wastes from being introduced into the environment.

EPA RESPONSE: Regulations applicable to the generation and disposal of hazardous wastes require that these materials be treated and/or disposed of in an approved facility. EPA, NYSDEC and NCDOH continue to enforce these regulations.

11. COMMENT: A resident expressed concern that she did not receive notification of the public meeting through the mail until three days before it was held and asked if earlier notification was possible.

EPA RESPONSE: Notice of the August 7, 1990 meeting was published in an area newspaper one week before the scheduled meeting date in accordance with statutory requirements. Follow-up notification was also sent to interested parties compiled on the site mailing list.

12. COMMENT: A resident asked if information regarding community relations activities for the site could be forwarded directly to interested civic organizations for subsequent distribution to the community-at-large.

EPA RESPONSE: In addition to fulfilling its statutory obligations regarding public noticing, EPA will forward appropriate community relations information to any civic organization or interested party requesting it.

13. COMMENT: Residents asked if measures to restrict public access to the PCB-contaminated soils had been taken and if these soils presented any risk to public health in their present location.

EPA RESPONSE: The majority of contaminated soils are currently covered with asphalt or with plastic sheeting while a small amount of soils with lower concentrations of PCBs are exposed at the surface. EPA believes that these soils do not pose any acute risks to the public. However, they do pose a chronic risk that will be addressed by their removal.

14. COMMENT: A resident asked about the circumstances which caused PCBs to be discharged to the spill area outside the pilot plant and in what form these discharges were made.

EPA RESPONSE: PCBs were contained in a heat transfer fluid used in manufacturing processes at the pilot plant. Based on EPA's historical knowledge of the site, discharges were apparently the result of pressure releases through a relief valve located to the south side of the plant building. These discharges occurred in the form of liquid spills.

15. COMMENT: A Nassau County official asked when the potentially harmful properties of PCBs became known.

EPA RESPONSE: The toxicity of PCBs was first identified in the mid-1970's. This knowledge was a cornerstone of the Toxic Substances Control Act of 1978, which essentially eliminated the production of PCBs.

Occidental Chemical Corporation

August 30, 1990

Mr. Douglas Tomchuk
United States Environmental
Protection Agency
Region II - Room 747
26 Federal Plaza
New York, NY 10278

RE: Hooker/Ruco Site
Focused Feasibility Study
Public Comments

Dear Mr. Tomchuk:

In response to the Proposed Remedial Plan for the PCB spill area at the Hooker/Ruco site, issued by the United States Environmental Protection Agency (EPA), Occidental Chemical Corporation (OCC), submits the following comments on both the EPA's Proposed Remedial Plan and OCC's preferred alternative.

OCC prefers the selection of Remedial Alternative 3, offsite landfilling of soils in excess of 25 ppm (parts per million), rather than the EPA's proposed option, Alternative 10. The primary difference between the two remedial approaches include revised target clean-up goals and preferential treatment of soils which contain PCB's in excess of 500 ppm. Spills not regulated under the Toxic Substance Control Act (TSCA), invariably require site-by-site evaluations. There is a certain amount of flexibility in selecting clean-up goals, therefore, OCC believes that Remedial Alternative 3 provides the best balance of the nine evaluation criteria. The proposed requirements which would require offsite thermal destruction of the PCB soils in excess of 500 ppm would cause delays in field implementation and require onsite storage of the material prior to incineration. The expected delays because of limited incinerator capacity would also unnecessarily increase the potential for acute exposure to the concentrated PCB soils, decreasing the short term effectiveness of the remedial approach. Also, a 25 ppm target clean-up goal is just as protective from a risk-based approach as the EPA's proposed clean-up goal of 10 ppm.

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OXY

Applying the TBC ARAR, TSCA Subpart D Storage and Disposal requirements, any non-liquid PCB at concentrations of 50 ppm or greater in the form of contaminated soils, rags or other debris shall be disposed of in an incinerator which complies with 40 CFR §761.70; or in a chemical waste landfill which complies with 40 CFR §761.75. Thermal destruction of PCB's at concentrations of 500 ppm and greater is theoretically acceptable, however, actual field implementation of this alternative is anticipated to cause complications and delay the remedial process, therefore, limiting this alternative's effectiveness.

Onsite complications would be expected to occur during field identification and segregation of the soils which contain PCB's in excess of 500 ppm. Because the area containing the PCB soils in excess of 500 ppm is limited to the direct spill area, initial removal efforts would not be delayed. However, defining the edges of the highly impacted soils will be problematic and time consuming. Field sampling would be required during the segregation/ excavation to assess the extent of +500 ppm PCB's, and will further delay soil excavation, pending laboratory confirmation.

Following the excavation of PCB soils in excess of 500 ppm, the segregated soils would require temporary onsite storage prior to transport to a permitted TSCA incinerator. Although the projected volume of PCB material in excess of 500 ppm is relatively small, 43 tons, current incinerator capacity at permitted thermal treatment facilities is severely limited. Based upon estimates that several months may be required prior to incineration of the segregated soils, the short-term effectiveness and implementability of this alternative would be reduced and the total remedial process for the site extended beyond current projected schedules.

In addition, during the expected delay period, the most concentrated levels of PCB soils would be stored onsite for extended lengths of time. Because these soils would be stored on an active industrial facility, significant increases in acute exposure risks to the onsite workers could occur. From an implementation and short-term risk standpoint, and to expedite the remedial process, OCC believes thermal treatment of the PCB material is unwarranted.

Occidental Chemical

Both the EPA's proposed target clean-up goal of 10 ppm and OCC's preferred target clean-up goal of 25 ppm, meet the substantive requirements of TSCA. Using long-term effectiveness and permanence criteria, both clean-up standards meet the EPA's acceptable risk range of 10^{-4} and 10^{-6}. Using Alternative 3's clean-up goals of 25 ppm, the reasonable maximum exposure (RME) to onsite workers would be 6.8×10^{-5} and in a future use residential scenario, the RME would be 4.5×10^{-5}. It is also anticipated for the foreseeable future, that the Hooker/Ruco site will remain industrialized and meet the requirements of a restricted access area. Under the TSCA PCB spill clean-up policy, a to-be-considered (TBC) ARAR, in all restricted access areas, contaminated soils must be cleaned up to 25 ppm PCB's by weight. To prohibit future residential land use of the Hooker/Ruco site, OCC believes deed restrictions could be implemented to prevent the future residential use scenario.

OCC would also like to clarify several issues raised during the August 7, 1990 public presentation meeting. The following comments are in response to statements made by EPA personnel during the question and answer portion of the public meeting.

> Several participants questioned the EPA regarding the detection of compounds other than PCB's in soil samples collected from the operable unit. Mr. Tomchuk's response concluded that "some low levels of everything were detected, but at non-significant levels or concentrations." Review of the CLP results of soil samples collected from the direct spill area during the 1989 RI indicate that no other detectable parameters, other than Aroclor 1248, were found to be present.
>
> Several participants wanted an explanation regarding the source of the PCB spill. Mr. Hauptman stated that the source of the spill was from a release valve on the roof of the pilot plant and that rainwater and vehicular traffic exacerbated the problem. Based upon review of the historical files, the release of PCB therminol occurred through periodic eruptions from a relief valve on the south side of the pilot plant approximately 6 feet above grade surface and not from a valve on the roof of the building.

Occidental Chemical

OCC appreciates the consideration of the aforementioned comments and understands that the final plan will include a discussion of each significant comment. OCC believes that the best balance of the evaluation criteria are satisfied in proposed Remedial Alternative 3, and hopes the final record of decision reflects this approach.

Very truly yours,

Alan F. Weston (lms)

Alan F. Weston, Ph.D
Manager, Analytical Services
Special Environmental Programs

AFW:lms
cc: John Hanna
usepa.ltr/90-22

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D. WRITTEN COMMENT

EPA's basis for selecting Alternative 10 is described in detail in the Record of Decision. The following is a summary of the comments made by Occidental in a letter, dated August 30, 1990.

1. **COMMENT:** Occidental prefers the selection of Alternative 3, landfilling of all soils in excess of 25 ppm of PCBs.

   EPA RESPONSE: EPA does not believe that off-site landfilling of soils with PCB concentrations over 500 ppm would meet the CERCLA statutory preference for treatment.

   Alternative 10 is also supported by EPA's recent guidance document, "Guidance on Selecting Remedies for Superfund Sites with PCB contamination." The principal threat, soils contaminated with PCBs at concentrations of 500 ppm or greater, are being treated. For an industrial site such as this, the guidance allows soils between 10 and 500 ppm to be contained; however, there is an exception for small volumes. This exception is appropriate for this site, so by fully remediating all the soils in excess of 10 ppm of PCBs at a relatively small increase in cost, the site does not require any long-term management controls.

2. **COMMENT:** Incineration of soils with concentrations exceeding 500 ppm would cause implementation delays, and may present a short-term risk during storage.

   EPA RESPONSE: Prior to acceptance by an incineration facility, for soils exceeding 500 ppm of PCBs, all of the contaminated soils could be excavated and segregated, and those with PCB contamination between 10 ppm and 500 ppm could be shipped to a TSCA-approved facility for landfilling. The 36 cubic yards (43 tons) of soils with concentrations exceeding 500 ppm could be containerized awaiting shipment to the incineration facility. Early coordination with such incineration facilities will provide a minimal lag time in acceptance of this material. Capacity for 36 cubic yards of material should not be a significant problem.

   Segregation of soils exceeding 500 ppm from those between 10 ppm and 500 ppm should be based on previous sampling results combined with confirmatory field sampling. The use of an on-site laboratory, with quick turn-around confirmation by Contract Lab Program methodologies, could provide the necessary information in a time-frame that would not substantially delay the implementation of the remedy.

3. COMMENT: 25 ppm is just as protective from a risk based approach as EPA's cleanup goal of 10 ppm.

EPA RESPONSE: While both cleanup goals would remediate the site to within EPA's acceptable risk range of 10^{-4} to 10^{-6}, the risk associated for site workers with a cleanup goal of 25 ppm, is 6.8×10^{-5}. The risk associated with a 10 ppm cleanup goal is 2.7×10^{-5}. Of course, EPA's selected cleanup level must provide protection to both human health and the environment, but, after that criterion has been met, the other balancing criteria may modify the selected remedy. At the Hooker/Ruco site, the balancing criteria lead to the cleanup level of 10 ppm, as described in the ROD and as summarized above.

In addition, EPA acknowledges Occidental's clarifications of several statements made by EPA at the public meeting, held on August 7, 1990. "Low levels of everything" were not detected in the soil samples analyzed as part of the 1989 Remedial Investigation. However, trace amounts of tetrachloroethylene and trichloroethylene, qualified as estimated values, were found in some of these samples. EPA also acknowledges that the relief valve was not on top of the pilot plant building; rather, it was located on the south side of the building.

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NORMAN F. LENT
4TH DISTRICT NEW YORK

COMMITTEE ON ENERGY AND COMMERCE
RANKING REPUBLICAN

COMMITTEE ON MERCHANT MARINE AND FISHERIES
SUBCOMMITTEE ON MERCHANT MARINE

AUG 2 1 1990

Congress of the United States
House of Representatives
Washington, DC 20515

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August 16, 1990

Mr. Douglas Tomchuk
Project Manager
U.S. Environmental Protection
 Agency - Region II
26 Federal Plaza
Room 747
New York, New York 10278

Dear Mr. Tomchuk:

I am writing to you in support of concerned citizens in my congressional district regarding proposed EPA cleanup of the Hooker-Ruco Superfund site in Hicksville, New York.

I publicly revealed the dumping of contaminated waste at the Hooker site during a June 1, 1979 hearing of the House Energy and Commerce Committee's Subcommittee on Oversight and Investigation in Mineola, New York. In addition, I have worked as the chief Republican sponsor in the House of the Superfund legislation that has been enacted by Congress.

I am pleased that EPA is proposing to move forward with the cleanup of this site and urge you to complete your task as soon as possible. I also request extreme caution when removing contaminated soil from the site avoiding whenever possible routes through residential areas.

Your care and concern for the views of Hicksville area residents in this matter is appreciated.

Sincerely,

Norman Lent

NORMAN F. LENT
Member of Congress

NFL/ms

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EPA responded to Congressman Lent in a letter dated August 30, 1990. The letter thanked the Congressman for his support and assured him that mitigative measures will be taken to minimize dust emissions from the site during the remedial action.